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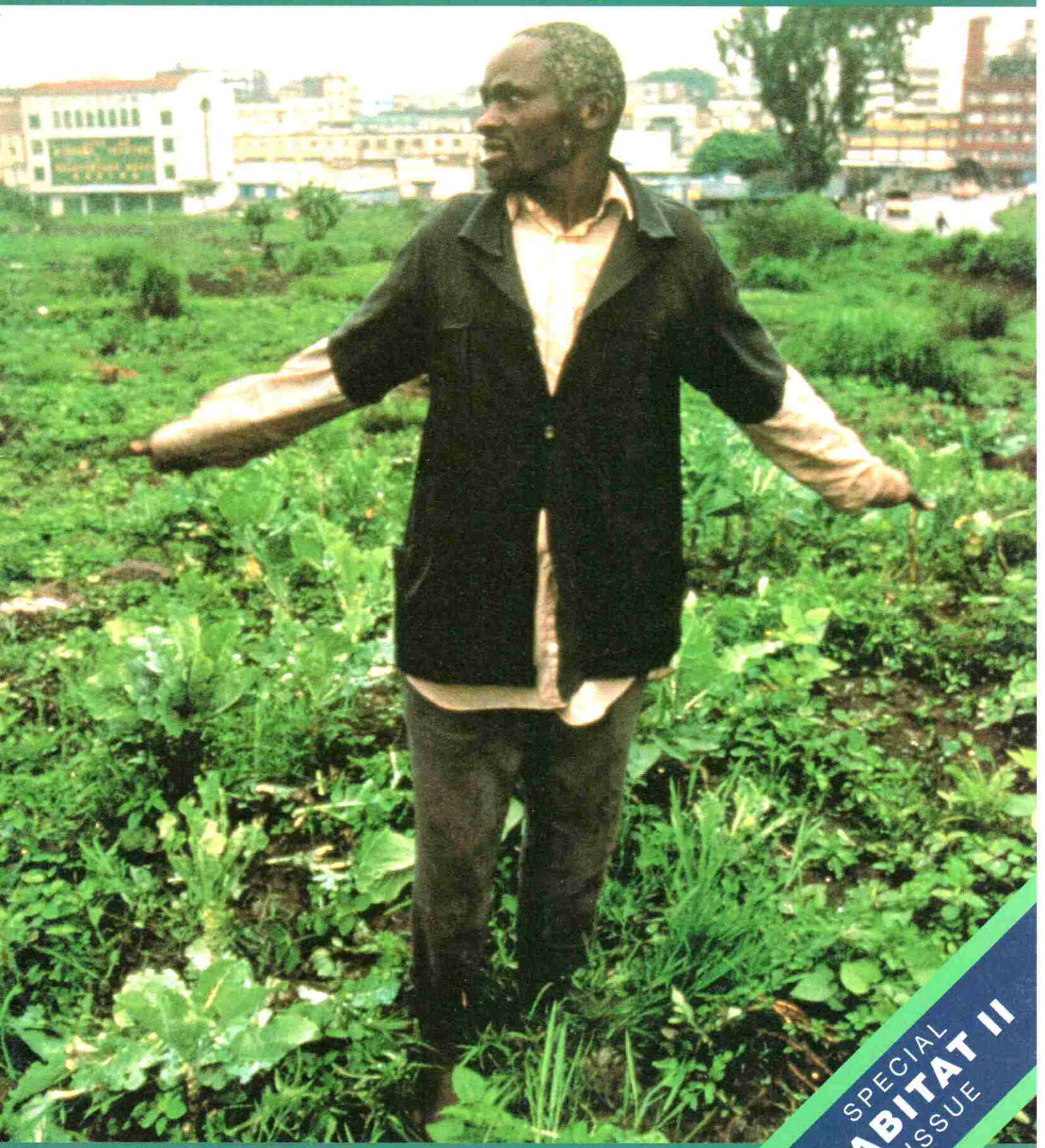
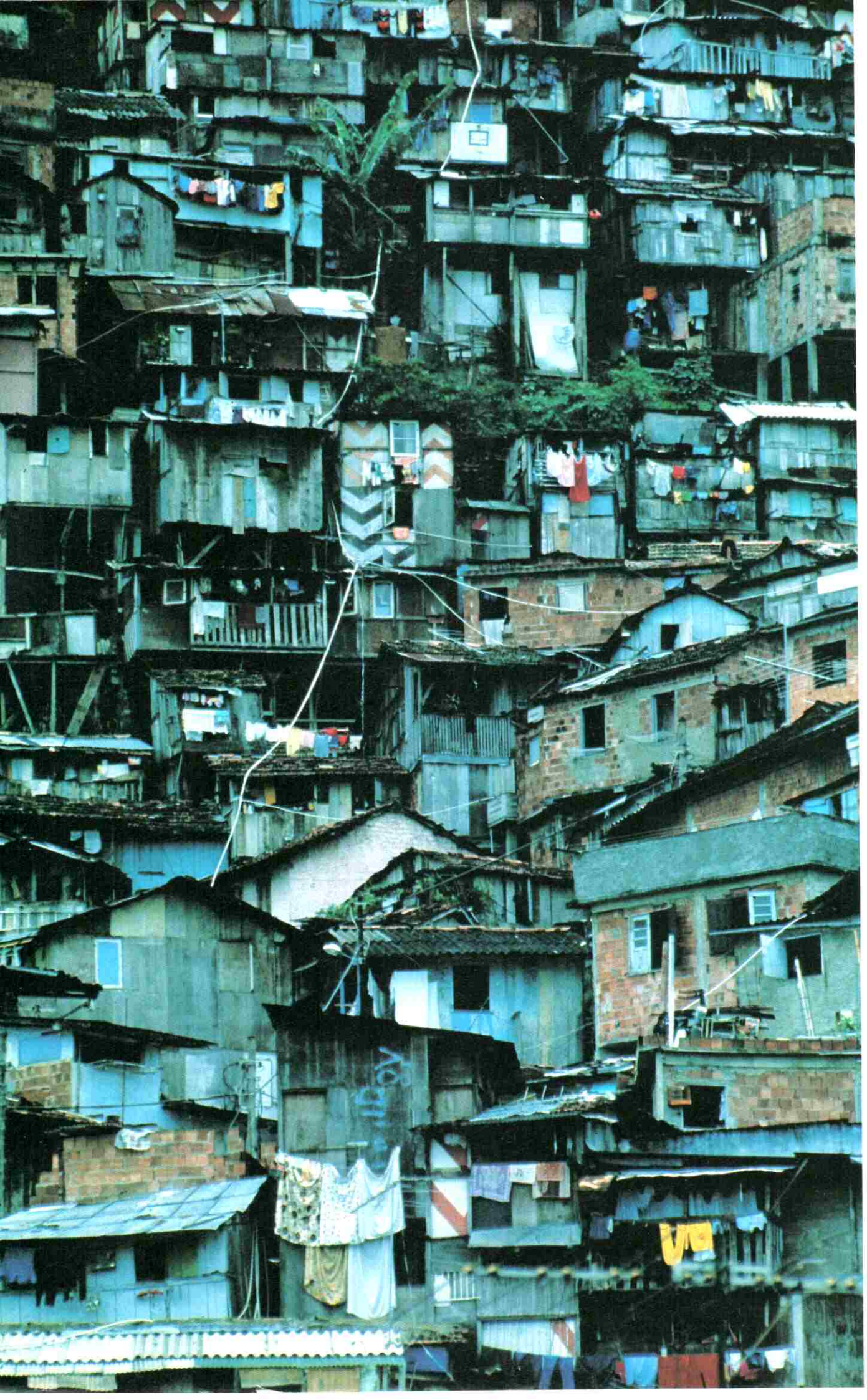
People & the Planet

Volume 5 Number 2



GREENING THE CITIES

SPECIAL HABITAT II ISSUE



Front cover: City farming in Nairobi, Kenya
Credit: Andrea Booher/UNDP
Left: Dona Marta favela, Rio de Janeiro, Brazil
Credit: John Maier/Still Pictures

People & the Planet

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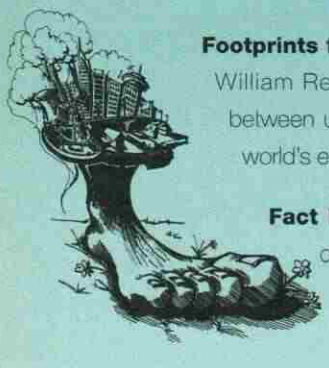

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Twenty years on

At the close of the first Habitat Conference in Vancouver, in 1976, Enrique Penalosa, the cheerful Colombian Secretary General of this $40 million jamboree, said that the meeting marked "a turning point in improving human settlements around the world." The reality has been rather different.

Few countries have established "long-range settlement plans, based on comprehensive national, ecological and demographic inventories" as was called for. Even fewer have set about "the public ownership and effective control of land in the public interest." The target for clean water by 1990 has fallen so far short that, by that date half the urban population of the South and more than 90 per cent of the rural population still lacked a piped water supply. The proposals for supporting self help and the informal sectors of city populations have made progress only in the face of those vested interests which Jorgey Hardoy so presciently attacked all those years ago. "There is no easy and quick exit from misery and injustice," he said in Vancouver. And so it has proved, as the gap between rich and poor has widened.

And yet, Habitat II takes place in a better informed atmosphere than its predecessor. As David Satterthwaite spells out, we now know that the emerging cities of the future can work.

They can be healthy, energy and resource efficient and culturally stimulating. If a partnership is formed between the urban authorities, industry and people, as has happened in Curitiba – and begun to happen in Bangkok and Guatemala City – there is hope for the future. Habitat II is a chance to speed up this process. As Jorge Wilheim, Deputy Secretary General of Habitat II, warns in our interview on page 10, cities will be the stage for ugly things ahead, but they also promise a brighter tomorrow.

John Rowley

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The following 'associates' are partners in the development and distribution of *People & the Planet*: AVSC International, Audubon, Center for Communication Programs, John Hopkins School of Public Health, Earthwatch, Center for Development and Population Activities, Family Health International, Futures Group, International Institute for Environment and Development, International Union for the Scientific Study of Population, Pathfinder International, Population Action International, Population Concern, Population Reference Bureau, Royal Swedish Academy of Sciences, Television Trust for the Environment, WWF-Alliance for Religions and Conservation.

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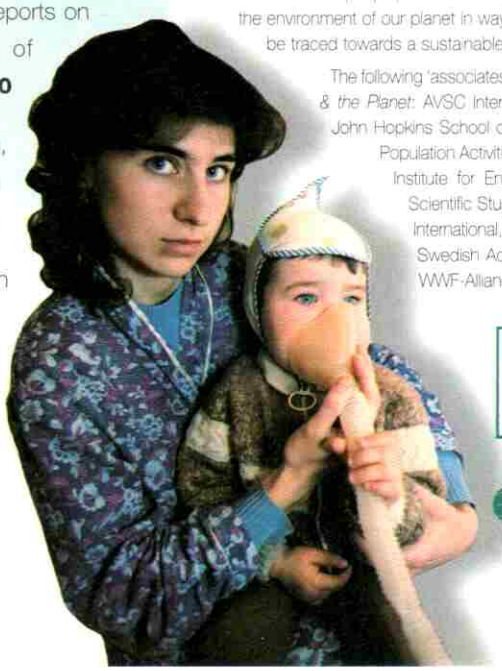

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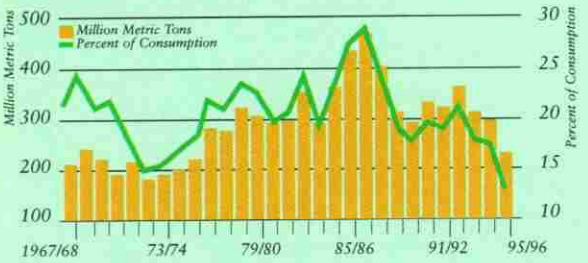
newsfile

FEAST OR FAMINE?

WORLD GRAIN STOCKS



Controversy over future trends in grain supplies has increased as world carryover stocks in 1996 have fallen to 48 days of world consumption – the lowest level ever recorded. As stocks have fallen, prices of wheat, rice, corn and other grains have risen by 50 per cent or more since late 1994.

The challenge which this presents to governments is spelt out by the Worldwatch Institute's *Vital Signs 1996*. According to this, steep rises in grain prices could threaten the lives of millions of the world's poor and lead to widespread political instability.

While the most immediate cause for the steep drop in stocks was late spring planting and scorching summer heat waves in the United States last year, Worldwatch says rebuilding stocks in 1996 will be much more difficult than in 1973, when the previous record low was recorded.

Increasing production enough to meet the same consumption level as in 1995 will take a 65 million ton jump in production. Providing for 90 million more people, as world population grows, will require another 28 million tons of grain. Rebuilding grain stocks to 60 days would call for a further gain of 58 million tons.

"Raising the 1995 harvest of 1,685 million tons to 1,836 million tons is not impossible," says Worldwatch "but given the lack of growth in world grain harvest since 1990, it will take an extraordinary effort by governments plus exceptional growing conditions."

The return to use of set-aside land in the United States and Europe should go some way to help, it says, but growing demand from rapidly industrializing China and the record of hot summers associated with global warming increases the challenge ahead.

"Restoring food security now depends on investing more in agricultural research, soil conservation, cropland protection, water efficiency, and other steps to expand food production.

"Beyond agriculture, achieving a stable balance between food and people may now depend heavily on population policies that can dramatically slow population growth in the next few years..."

A somewhat similar note is struck by Per Pinstrup-Andersen, Director General of the International Food Policy Research Institute (IFPRI), who says that policies must be developed to protect poor people from changing food prices.

However, IFPRI appears rather more confident about the future. "If governments invest in agricultural research and follow proper economic policies, global grain production will keep up with demand and prices will continue the downward path of the last 50 years," it concludes.

Vital Signs 1996, Worldwatch Institute and W.W.Norton, Washington, USA. *2020 Vision Brief 30, Rising Food Prices and Falling Grain Stocks: Short-Run Blips or New Trends*, IFPRI, Washington, USA.

Paul Harrison / Still Pictures

"About 120 million acts of sexual intercourse take place each day resulting in violence, coercion, subjugation, fun, 400,000 live births, 150,000 induced abortions and 500,000 sexually transmitted infections...

"Reproductive ill-health constitutes for women, around 40% of the total burden of disease between the ages of 15 and 44...

"Women must be given the right to control their own bodies, their fertility and their lives."

Halfdan Mahler, former Secretary General of IPPF at the first Mahler Forum in Copenhagen, an annual event instituted by the Danish Family Planning Association.

POPULATION AID LOST...

Hard-headed observers at the Cairo Conference on Population and Development in 1994, warned that the target for increased spending on reproductive health, including family planning, totalling $17 billion a year by the end the century, would be the real test of serious intent by those signing up to the conference recommendations.

Now, it seems, some of the funding support is slipping away, while others are attempting to meet their obligations. Overall the donors are falling short of the trajectory needed to meet the Cairo goals.

Most worrying is the major reduction in population assistance signalled by the United States earlier this year. The foreign aid bill, agreed by Congress and the President, reduces the funds for international family planning to a maximum of 65 percent of the 1995 total. It also eliminates the separate account that has been exclusively earmarked for population assistance.

In practice this means that the actual spend of $570 million on US population assistance of all types in 1995, will be severely cut back, with no mandated funding for international population programmes as in previous years. Other restrictions on when funding could begin (not until July) and on how much can be given in any one month (6.7 per cent) mean that only 20 per cent of the 1996 USAID for new population activities can be committed this year.

The bill limits the contribution to UNFPA to $30 million, $5 million less than last year, but UNFPA will actually receive only $22 million.

The new restrictions on population funding are the outcome of a deal to end the log-jam over abortion-related language which held up the passage of the foreign aid bill. Under the final deal, the administration dropped the language on abortion demanded by the Republican majority in Congress, but imposed damaging financial

restrictions. These include a huge $1.6 billion drop in overall foreign aid, amounting to 11 per cent of the 1995 total.

Most worrying of all, the major cuts will come in the area of sustainable development. Israel and Egypt, which are exempt from cuts for political reasons, will receive over 40 per cent of overall foreign aid in 1996.

...and found

Better news comes from some European countries, including Germany, the Netherlands, Norway and Denmark which have significantly increased their funding for population activities.

German population aid increased by 37 per cent in 1995, with $155 million going to family planning and another $127 million for population-related activities such as girls' education and women's programmes.

The Netherlands parliament has called for four per cent of foreign aid to go to reproductive health programmes by 1998, a measure which could triple Dutch population assistance from $50 to $150 million.

Canada is expected to supplement its funding to IPPF and UNFPA after recent big cuts, while Sweden has been forced to reduce its funding to both organizations as a result of domestic pressures. The World Bank, meanwhile, hopes to double annual lending for population, health and nutrition projects from the present level of $1.2 billion, over five years, and to lend $900 million for girls' education.

UNFPA, which saw its budget grow from $262 million in 1994 to $313 million in 1995, continues to attract donor confidence at a time when other UN agencies have seen big budget cuts.

Overall, the future of population funding will turn partly on the outcome of the US elections. Another important factor will be the future direction of Japanese aid. Japan is now the world's number one donor country in terms of total aid dollars. But much of this is loan aid, and relatively little goes on bilateral population and family planning assistance. That is likely to change as Japan turns its promise to tackle issues of importance to all *chiyushimin* (earth citizens) into action.

THE GLOBE IS WARMING

The latest detailed findings of the Intergovernmental Panel on Climate Change (IPCC) are due to be published in three volumes in the next few months. But the central message of this Second Assessment Report was made clear at the 11th session of the panel in Rome last December.

This assessment, drawn up with the help of 2,000 scientists worldwide, goes beyond the panel's first report, in 1990, to agree that "the balance of evidence suggests a discernible human influence on global climate."

The IPCC climatologists predict that a doubling of carbon dioxide and

Phil Ward

other gases in the atmosphere over the next 100 years would lead to a rise in the earth's temperature of between 1 and 3.5 degrees Celsius. This is an average rate of warming higher than at any time in the last 10,000 years.

They say temperatures would go on rising after that, even if emissions of greenhouse gases that trap heat in the atmosphere were stabilized at that time.

There is no certainty over what this warming would do, but the scientists' predictions include heat waves, droughts, floods and hurricanes, a severe decline of harvests in some poor countries, a retreat of forests and the spread of tropical diseases. Sea level rise associated with a warmer climate would also threaten many small island countries, deltas and low lying coastal areas.

Elsewhere, in Europe for example, warmer weather could increase the growing zone for winter wheat and other crops.

The overall cost of global warming remains largely unknown with estimates varying from a half to 10 per cent of GDP.

The IPCC reports can be ordered from Cambridge University Press, 110 Midland Ave., Port Chester, NY. USA. Fax: 1-914 9374712.

HYDRO GASES

Recent research has shown that reservoirs behind hydro-electric dams in tropical forest regions can contribute far more to global warming than fossil-fuel burning power plants.

This surprising fact is the result of work by Dr Philip Fearnside of the Brazilian National Institute for Research in Amazonia, who has concluded that, in 1990, reservoirs in Brazil's Amazonia emitted about 0.26 million tons of methane and 37 million tons of carbon dioxide.

Greenhouse gases from dams come primarily from rotting vegetation in the reservoir. In the case of the Balbina dam, which flooded over 3,000 square kilometres of uncleared rainforest, the result was particularly severe.

According to Dr Fearnside, emissions from that reservoir had 26 times more impact on global warming than the emissions from a coal power station generating the same amount of energy.

Although the gas releases from Balbina will decline over the years as the flooded trees decay, Fearnside calculates that they will always be higher than those from equivalent fossil fuel generation.

The gas emissions from another Amazonian reservoir were 60 per cent of those from an equivalent coal powered station, but more than from a gas powered one. So far only four large dams have been created in Amazonia, but another 75 are planned.

Contact: International Rivers Network, 1847 Berkeley Way ,Berkeley, CA 94703 USA. Fax: (510) 848 1008.

PROTECTING THE SEAS

Emerging awareness that the threats to marine resources and wildlife are immediate and severe has led to a new agreement between over 120 governments on the Conservation and Sustainable Use of Marine and Coastal Biological Diversity, *writes Siân Pullen.*

Attention to these issues is still a relatively recent phenomenon and in Jakarta, Indonesia in November 1995, governments reaffirmed the critical need for action. Their decision is part of the continuing development of the Convention on Biological Diversity, agreed in Rio in June 1992.

Most importantly, for the first time within a global legally-binding framework, the use of integrated marine and coastal area management is encouraged as the most suitable framework for addressing the problem.

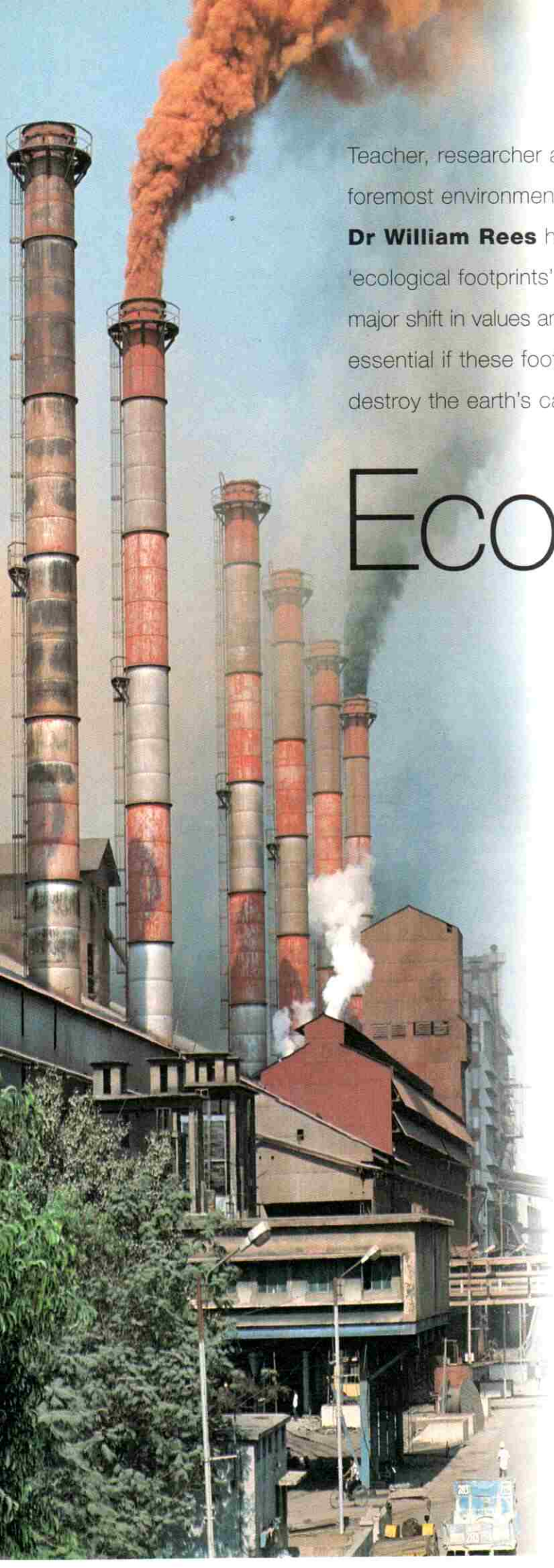
Primary threats to marine and coastal biodiversity include the loss and degradation of coastal and marine habitats, over-exploitation of living resources (fisheries and other species such as mangroves), pollution from both land-based and sea-based

Charles Hood / WWF UK

sources, aquaculture and the introduction of alien species.

Fisheries discussions at the meeting were very controversial and the resulting agreement has regrettably deferred much action on fisheries impacts on marine and coastal biodiversity. It was also difficult to obtain much recognition for the importance of Marine Protected Areas as a way of protecting biodiversity. These are clearly two important areas of marine management where urgent action is required and the political will is still not present.

Dr Siân Pullen is Marine Conservation Officer at WWF-UK.



Teacher, researcher and founding member of Canada's foremost environmental NGO, Pollution Probe, **Dr William Rees** has pioneered work on the 'ecological footprints' of cities. Here he warns that a major shift in values and consumption habits will be essential if these footprints are not to destroy the earth's carrying capacity.

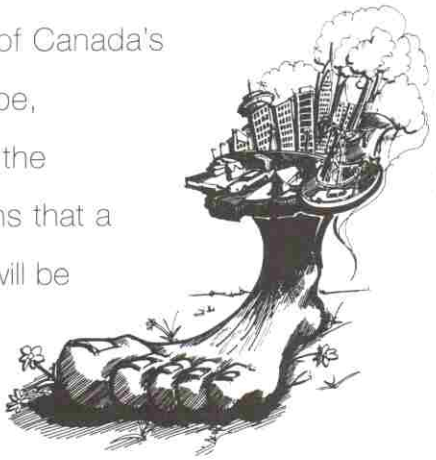


Illustration: Phil Testemale, from *Our Ecological Footprint*

Ecological foo

Have you ever asked yourself: How much of the Earth is dedicated to sustaining just me? Not many of us have – urbanization, trade, and technology have alienated modern urbanites from the land.

The fact is, however, that the ties that bind have never been stronger. High income urban societies require a constant input of material and energy from nature not only to feed themselves, but also to build and maintain the consumer and capital goods, the factories, the service infrastructure – all the accoutrements of modern life.

The waste burden has, of course, increased proportionately. In fact, since the beginning of the industrial revolution, our *industrial* metabolism has grown to far exceed our biological demands on the ecosphere. As a result, popular illusions notwithstanding, people today are more dependent on nature's services than at any previous time in history.

The material flows necessary to sustain our consumer lifestyles and our cities make direct and indirect claims on land and ecosystems all over the Earth. By estimating these physical 'appropriations', my students and I have shown that the citizens of high income countries typically use the output of between three and five hectares of ecologically productive land per capita.

It is a simple step from there to estimate the true ecological footprint (EF) of a whole city, region, or country. We define the 'ecological footprint' of any specified population as the total area of productive land and water required on a continuous basis to produce all the resources consumed, and to assimilate all the wastes produced, by that population, *wherever on Earth that land is located*.

Global hinterland

Wealthy cities and countries prosper by appropriating the carrying capacity of an area vastly larger than the spaces they physically occupy. For example, the Canadian city of Vancouver had a 1991 population of 472,000 and an area of 114 km^2 (11,400 hectares). With a per capita land consumption rate of 4.3 hectares, Vancouver's residents require (conservatively) two million hectares of land to support current consumption levels. However, the area of the city is only 11,400 ha.

This means that the city's population uses the productive output of a land area nearly 180 times larger than its political area

F.N. Petit / Panos Pictures

to maintain its consumer lifestyle. If we add the aggregate marine footprint (.7 ha/capita), the total becomes 2.4 million hectares or over 200 times the size of the city.

These results are fairly typical. The International Institute of Environment and Development estimates that London's ecological footprint for food, forest products, and carbon assimilation to be 120 times the surface area of the city proper. Researchers at Stockholm University report that the aggregate consumption of wood, paper, fibre, and food (including seafood) by the inhabitants of 29 cities in the Baltic Sea drainage basin appropriates an ecosystem area 200 times larger that the cities themselves (the later study does not include an energy component.)

ecological production systems have become global, horizontally disintegrated, throughput systems.

For example, instead of being returned to the land, Vancouver's daily appropriation of Saskatchewan mineral nutrients goes straight out to sea. Agricultural soils are therefore degraded (half the natural nutrients and organic matter from much of North America's once rich prairie soils have been lost in a century of mechanized export agriculture) and we are forced to substitute non-renewable artificial fertilizer for the once renewable real thing. This further damages the soil and contaminates water supplies.

All this calls for much improved accounting for the hidden ecological costs of urbanization and a redefinition of economic efficiency.

tprints of the future

These data show that as a result of enormous increases in per capita energy and material consumption, and growing dependencies on trade, *the ecological locations of cities no longer coincide with their locations on the map*. Modern high-density settlements necessarily appropriate the ecological output and life support functions of distant regions all over the world through both commercial trade and natural biogeochemical cycles.

Cities may be the engines of economic growth and the brightest stars in the constellation of human achievement. However, they also resemble entropic black holes, sweeping up the output of whole regions of the ecosphere vastly larger than themselves.

Perhaps the most important insight from this result is that no city or urban region can be sustainable on its own. Regardless of local land use and environmental policies, a prerequisite for sustainable cities is sustainability of the global hinterland.

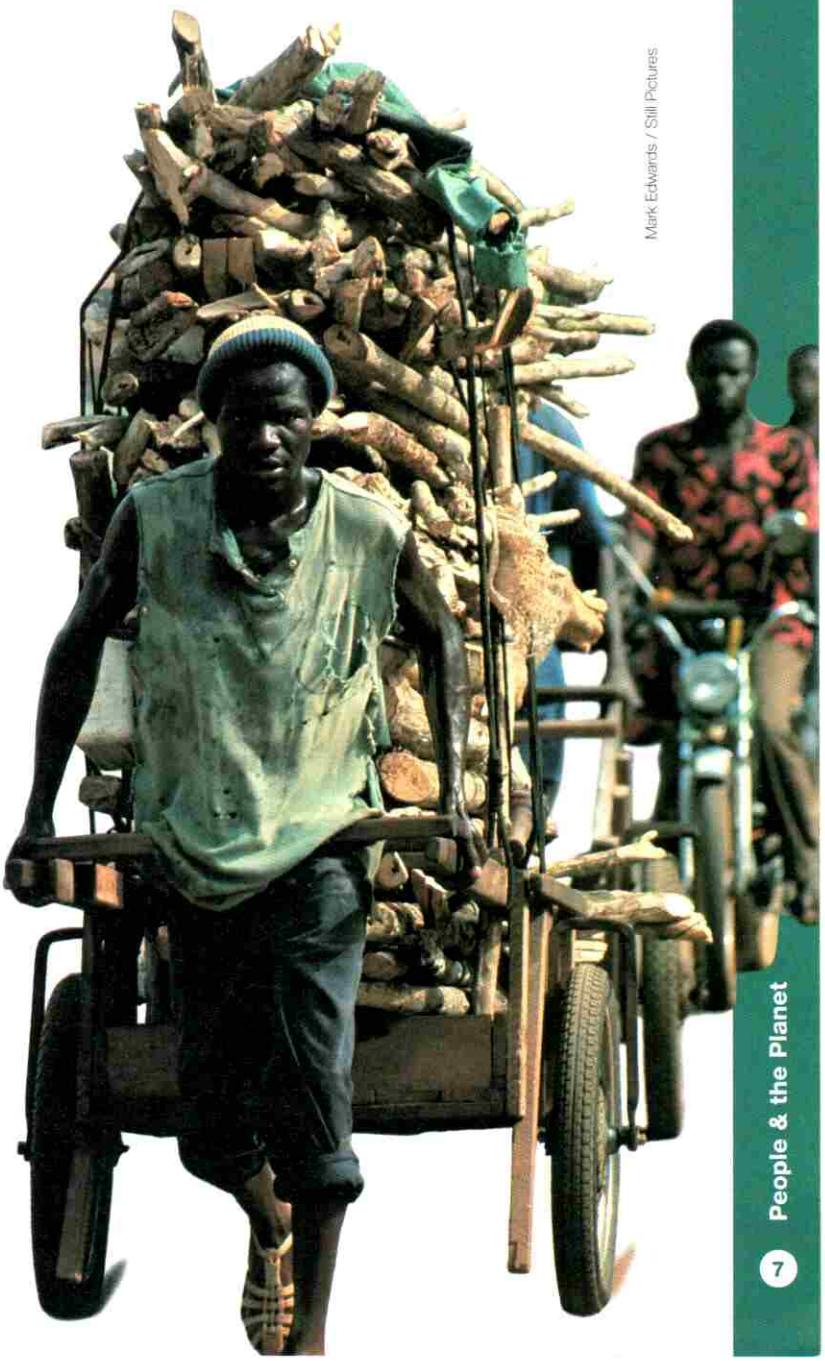
Urban sustainability

For deep structural and ideological reasons, continued economic growth in both the North and South remains virtually unchallenged as a goal of global 'sustainable development'. Meanwhile, various studies suggest that even the present level of aggregate consumption exceeds the long-term human carrying capacity of the Earth.

Let's assume a near-doubling of population and a quadrupling of world output over the next 50 years (only 2-3 per cent growth per year). Scientists agree that in these circumstances, resource use and environmental impact per unit of consumption in high income countries must be reduced by up to 90 per cent if we are to achieve sustainability fairly within the planet's ecological means.

Cities present both unique problems and opportunities in closing this sustainability gap. Perhaps the most significant problem is that cities typically disrupt the biogeochemical cycles of vital nutrients and other chemical resources. Removing people and livestock far from the land that supports them prevents the economic recycling of phosphorus, nitrogen, other nutrients and organic matter back onto farm and forest land. As a consequence, local, cyclically integrated

Left: Heavy pollution from steelworks in Jamshedpure, India.
Below: Taking fuel wood to market in Daloa Town, Ivory Coast.



Mark Edwards / Still Pictures

On the plus side, the sheer concentration of population and consumption gives cities considerable leverage in reducing their ecological footprints. Properly planned, urbanization can mean:

- re-use, re-manufacturing, and the specialized skills and enterprises needed to make these things happen;
- high population densities which reduce the direct per capita demand for land;
- more opportunities through economies of scale, co-generation, and the use of waste process heat from industry or power plants, to reduce the per capita use of fossil fuel for space-heating;
- great potential to reduce (mostly fossil) energy consumption by motor vehicles through walking, cycling, and public transit.

Ecological space

On the other hand many of the environmental demands and impacts that can be traced to cities have nothing to do with the structure, form, or other inherent properties of cities per se. Rather, they are a reflection of societal and individual values and behaviour. These impacts would occur regardless of settlement pattern.

For example, if an individual's personal consumption demands the continuous output of four hectares of land scattered about the globe it doesn't much matter where that individual resides. Thus, the issue here is whether the unique properties of cities make them inherently more or less sustainable than alternative settlement patterns. Until we know the answer to this question, we cannot know whether further urbanization should be encouraged or resisted.

In the meantime, we clearly must liberate ecological space for the world's poor. It seems that the wealthy have a moral obligation both to make their cities more ecologically benign and to reassess their private consumption patterns.

Dr William Rees has taught at the University of British Columbia since 1969 and is currently Professor and Director of the university's School of Community and Regional Planning. His latest book, co-authored with Mathis Wackernagel, is *Our Ecological Footprint: Reducing Human Impact on the Earth*, New Society Publishers, Gabriola Island BC and Philadelphia PA, 1995.

Taming our cities

Making cities work sustainably is a most urgent task of the emerging urban age: much of their functioning depends on unsustainable processes, *writes Herbert Girardet*. For instance, in the 19th century London's pioneering use of fossil fuels facilitated its growth into the world's first megacity. Today, 7 million Londoners burn an annual equivalent of 20 million tonnes of oil, or two supertankers a week, and similar amounts are contained in the products it imports. London's footprint – the area needed for producing its annual 3.6 million tonnes of timber and paper, and 2.4 million tonnes of food, and for reabsorbing its C02 output of 60 million tonnes – adds up to 125 times its surface area, Britain's entire productive land.

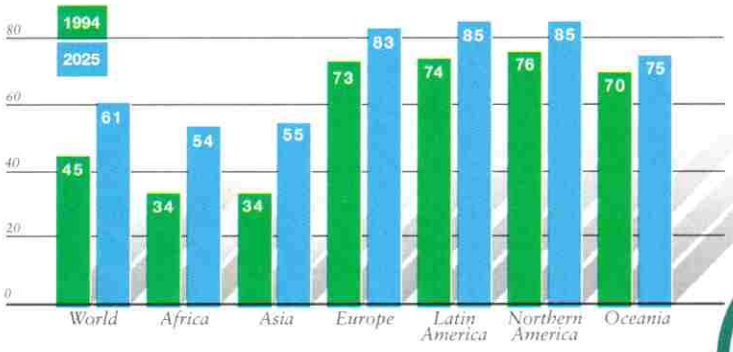
To reduce the footprint of cities means changing their metabolism: to turn linear processes into circular ones and to replace profligacy by efficiency. For the food system this means less meat-rich diets, and recycling of human wastes into fertiliser. For forest conservation, greater consumption efficiency and routine recycling, are essential.

The waste utilization practices of southern cities, and the state-of-the-art recycling equipment installed in some northern ones, are of worldwide significance. Today, decentralized cooperation between cities north and south for enhancing their metabolism is essential.

The enormous business and job creation potential of resource-efficiency programmes is, at last, being recognized. The planet's future health will depend on their energetic implementation.

The diagram is reproduced from The Gaia Atlas of Cities *by Herbert Girardet, special Habitat II edition, Gaia Books, London, 1996. (See review page 31).*

J.P. Delobelle / Still Pictures



Percentage of population living in urban areas in 1994 and 2025

Source: UN Population Division, 1994

How the cities Grow

The world's urban population is growing fast. Within a few years – and certainly by 2005 – for the first time in human history, half the 6.5 billion people of our planet will be living in towns and cities.

That is a huge change. In 1950, only 29 per cent of the world's population of 2.5 billion were urban dwellers. And 83 per cent of the developing world's people were still living on the land. If the UN projections are to be believed by 2025 over 60 per cent of the world's 8.3 billion global citizens will be living in towns and cities.

While attention is often focused on the world's biggest megacities such as Sao Paulo and Bombay, they contain only a relatively small proportion of all urban dwellers. Today, only about 15 per cent of urban dwellers live in cities with more than 5 million people, while over 60 per cent live in towns and cities of one million or fewer.

Nor is the proportion likely to change dramatically. The UN projects that by 2025 18 per cent of the urban total will be in cities with over 5 million people.

In fact, the speed of growth in most megacities slowed during the 1980s, so that some of the early projections have had to be drastically revised. In the early 1970s, for example, the UN projected that Mexico City would grow to over 31 million by the year 2000. The latest (1994) estimate now expects that figure to be 16.4 million.

Others cities where estimates for end of century numbers have had to be scaled down include Rio de Janiero (from 19.4 to 10.6 million), Calcutta (19.7 to 12.7), Cairo (16.4 to 10.7) and Seoul (18.7 to 12.3). Other projections have proved more accurate, as in the case of Bombay, which is still expected to house over 18 million people by the year 2000.

Overall the picture is a mixed one. Some of the 30,000 urban centres in the South grew very fast in the 1980s, some grew rapidly and many grew slowly or not at all. In general, the greatest growth took place where economic activity was most buoyant, as in China. According to David Satterthwaite, it is no accident that 199 of the world's 281 million-plus cities are found in the world's 25 largest economies.

What is unprecedented, is the number of countries which are rapidly urbanizing and the number of cities that are growing rapidly. Many of today's million-plus cities have seen numbers grow tenfold in 40 years. These include places such as Amman, Curitiba, Dhaka, Khartoum, Lagos, and Seoul.

Also without precedent is the appearance of the huge agglomerations, never experienced before. In 1940, only New York and London had more than 5 million people. By 1990 there were 30 cities with over 5 million people of which 22 had over 8 million. Ten of these larger megacities are in Asia, which is projected to add a further nine by 2025.

Whether megacities continue to grow, or to decentralize away from the dominant city into larger regional urban groupings, depends on many and varied factors, including the development of modern communication and transport systems.

Migration

Shockingly little is known, with certainty, about urban migration, though some estimates are that it may account for between 40 and 60 per cent of annual urban population growth. Migration is clearly more significant in rapidly industrializing regions such as Asia and parts of Africa. China, for example, may see 200 million more rural labourers looking for work in the cities over the next decade.

Migration across borders to urban centres is a growing phenomena. For example, as transport links improve and economic barriers fall the migration north into Mexico and the United States is increasing. The recent civil war in El Salvador prompted nearly a fifth of the population to leave the country, mostly to the United States.

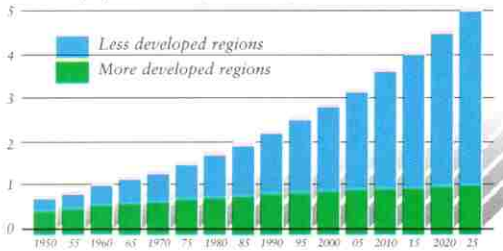
Though many migrants work in the informal sector, with low pay and little security, surveys suggest that the move to the city does improve their situation. One survey in New Delhi found that poor migrants from the countryside found their income was more than twice what they could earn in the village.

Urbanization has also had a generally positive effect on the access to reproductive health care, the importance of which for the health of mothers and infants cannot be overstressed (see page 15). It has played a key role in assisting the decline in the average family size in developing countries from over six children in the 1950s to under four today.

Along with education, income and health care, the decline in birth rates correlates closely with urbanization. Despite all the environmental hazards, life expectancy is significantly longer and infant mortality significantly lower in urban areas, as against rural ones. At the same time, the relative concentration of the poor in towns and cities is increasing. By the year 2000, UN estimates suggest that half the world's poorest people, or some 420 million, will be living in urban settlements. This represents an institutional as well as a political challenge in dealing with rapid social, economic and demographic change.

This article has been prepared with the generous assistance of Robert Livernash, Senior Editor at the World Resources Institute (WRI) in Washington and David Satterthwaite, Director of the Human Settlements Programme at the International Institute for Environment and Development in London. It is partly drawn from *World Resources 1996-97*, published by WRI.

Urban population (billions) 1950-2025



Source: UN Population Division, 1994

Cities will be the

The outstanding Brazilian architect and city planner, **Jorge Wilheim**, is Deputy Secretary General of Habitat II, the City Summit to be held in Istanbul in June. It is the latest stage of a remarkable career which has included the planning of 20 cities, including State capitals such as Curitiba, Goiania, Fortalaza, Natal and Joinville and the flourishing pioneer city of Angelica in Mato Grosso. Here he talks to *People & the Planet* about his hopes for Habitat II.

We are now 20 years on from Habitat, the first world conference on human settlements. Looking back over that period what would you say has been achieved ?

The Vancouver conference stressed the responsibilities of government in providing housing and the need for international cooperation in this field. As a consequence a United Nations centre was set up, based in Nairobi, that provided technical assistance in developing and less developed countries. In many countries housing systems were set up by governments, producing a large number of units, but far from covering the increasing needs.

What are the main reasons for not achieving the objectives set out at Vancouver? What did change during the period?

In these two decades major economic fluctuations have undermined national financing possibilities in most countries. The oil price increase in 1979-80 had devastating effects in many countries. Then the heavy petro-dollars lending to developing countries, eagerly received, produced economic growth but also built up a huge debt that paralysed many developing countries in the 1980s.

In the 1990s, most developing countries suffered economic stagnation, inflation, high interest rates, unstable currencies and, in some cases, political and social instability. The only major exceptions were the large Latin American economies, China, and the dynamic Asian economies. The present structural adjustment promoted by multilateral agencies is causing severe unemployment and disruption, in the name of an arguable privatization campaign.

Among other changes, in the period, we have had the 'Cold War', followed by the disappearance of the Soviet Union, bringing all contradictions inside the capitalistic system, and giving rise to the specific situation of East Europe.

Finally, it is important to underline the technological changes that are significantly altering production, employment and culture. The information technology and telematics, the merger of telecommunications with the computer, has accelerated all processes of change and shifted considerable financial resources out of governmental control into the capital market.

In spite of not having fulfilled all the objectives of the Vancouver conference, the urbanization process brought along a better average set of indicators. If we compare indicators of the 1950s with those of the 1990s, progress is evident. But if, instead of considering average indicators, we break them up in each country, we also find that the gap between the richest and the poorest bracket has widened. The urban society lives better but is still an unjust society...

Looking back, all countries were called upon to prepare "a comprehensive national ecological and demographic inventory to guide long-term settlement planning". How many actually did this, and how many acted upon it?

While many countries made such a demographic inventory, the urbanization process was still active; and the non-governmental ecological organizations took over the campaign for the protection of ecology during the 1980s, giving the emotional push that was necessary, in order to make so many isolated scientific alerts accepted by governments. Many national reports for the Rio Conference in 1992 were dynamic inventories.

There was also a call for "public ownership and effective control of land in the public interest". We seem to have moved away from that idea, haven't we?

The disappearance of the Soviet Union, and thus of centralized planning,

stage for a new culture

which obviously failed, resulted in a notion - I believe incorrect - that the socialist ideals of equity and of prevailing public interest are dead and that the market is sufficient to solve the need for access and provision of land and housing. I believe we shall come back to these ideals in the developing process of democracy in the next century. The land issue is still crucial for access to shelter and I don't think that the market can solve all problems as long as income distribution is unbalanced, gaps increasing, and poverty prevails. The pendulum is now obviously strongly leaning towards privatization. It will come back, although not to the same illusions of the Vancouver period. The state is necessary, increasingly so, but its role has changed. Instead of being a provider of goods, it will be an enabler of partnerships, a facilitator of economic growth, and the democratic ordainer of civil rights and public policies.

Another goal was self-help and support for the informal sectors of city populations. How far have we moved in that direction?

The enabling strategy was developed in the last decades by international institutions and in many countries it is giving support to all kinds of self-help. If we consider the "best practices" that we are preparing for the electronic catalogue that is going to be presented in Istanbul and permanently kept, we will find an amazing number of self-help initiatives; but not at the individual level. People and organizations are far ahead in the experience of partnership; even local governments are already engaged in solving problems through partnerships with the private sector and with NGOs.

As for the 'informal sector', I consider it the least known aspect of the real economy. It sometimes only reveals a moving survival strategy, sometimes a system to avoid paying taxes and insuring employees, but sometimes it indicates a useful way of economic growth, that curbs bureaucracy, and diversifies and decentralizes production. I don't think that the informal sector is an easy 'solution' to national economic or political crises as some governments hope.

What about the idea of investing in the rural areas to ease migration from the countryside?

This is precisely what was done in the past; it didn't prevent migration toward cities. On the contrary, if investments in agriculture are limited to its modernization, we shall need fewer people in the rural sector while increasing productivity. The rural/urban linkages must be seen in a new way, decentralizing non-rural activities in the country, diversifying the non-urban activities and enhancing cultural opportunities. This will not prevent the next century from being an urbanized one, but it will restrain the disaster of excessively rapid urbanization in such countries as India and China.

In terms of Habitat, there was much talk about clean water for all by 1990. How much progress have we made on that front?

Some localized progress was made, mainly in Latin America. But, in 1990 close to half the urban population in the 'South' countries and more than 90 per cent of the rural population still lacked a water supply piped into their homes. With urbanization the sewage problem is also rising to a crucial level for the maintenance of public health. In this field I think it is urgent to find and implement a new technology, that is decentralized, and which avoids the costly necessity of collecting sewage.

So how would you sum up the change in approach to Habitat II, as against Habitat I? Should we expect this meeting to be more productive than the last?

The first change in approach comes from the fact that we are setting up the first United Nations conference of partners. Up to now, all UN conferences were strictly governmental; an NGO forum was tolerated, sometimes even with sympathy and support, but always outside the Conference and without any connection. In Istanbul the partners and stakeholders of human settlements, local authorities, private sector, researchers, NGOs labour unions, parliamentarians, will join the efforts of central governments. This arrangement will be done through a delegates committee, called the 'Hearings Committee' or the 'Partner's Committee', to which all partners will take their findings, statements and commitments, and the results of their own preparatory process for Habitat II.

A second change is being envisaged: the main conference document, the Habitat Agenda, containing the Global Plan of Action, is forcibly a consensual document. In order not to lose many good ideas that did not receive unanimous consensus, we shall offer to any participant of the Istanbul meeting (country, city or NGO) a 'Table of Commitments' where, in front of the media and the public, specific declarations and commitments can be signed.

A third change concerns the products we are aiming at: beyond important statements of principles and policy measures concerning international co-operation, we are considering a permanent electronic catalogue of best practices with bi-annual awards; a global urban observatory based on indicators and other analyses; a change in the criteria of financing housing and urban development; and a system of technical assistance based on enablement and decentralization.

What lessons can be drawn from your own work in Brazil, and how can these be applied in the future?

As a professional planner I owe most of what I know to the observation of who builds and operates a city. The success of some planning, like the case of Curitiba, of whose basic new plan I was responsible in the 1960s, derives from a respectful observation of human and social realities and physical constraints, as well as the notion that nothing can be achieved, in a sustainable process, unless you stir the pride of citizenship for the city they live in. The rest is good ideas and partnerships.

What is your long-term vision of cities in the 21st century?

Mankind is going through an historical transition. The uncertainty that makes every person and organization and institution, self-defensive and intolerant, will lead to some years of increasing exclusions, intolerance and violence, and the weakening of social consistency. Cities will be the stage for ugly things.

But the process of change will go on and the seeds of the future can already be observed around us: transnational corporations engaging in social projects; institutions of a new kind, public/private, being set up; new, decentralized systems of industrial production and services linked to knowledge; local authorities networking over across the borders.

Cities will then start to be the stages of a new culture, of a Renaissance of its kind. Not bad places to live in.

Towards healthy cities

There is no need for cities to be the unhealthy places that so many are, argues **David Satterthwaite** in this global review of the potential for positive change. More than a third of the urban population in Africa, Asia and Latin America live in housing of such poor quality with such inadequate provision for water, sanitation, drainage, garbage collection and health care that their health is constantly under threat. But, properly planned, cities can be safe and healthy.

In the cities of the South, it is common for one child in three to die before the age of five and for virtually all infants, children and adults who survive to have disease burdens many times higher than they should.

Diarrhoea, tuberculosis and respiratory infections (each among the largest causes of death worldwide) are generally much increased by overcrowding. Many accidental injuries happen when there are three or more persons living in each small room in shelters made of flammable materials and there is little chance of providing occupants (especially children) with protection from open fires or stoves.

But cities also include some of the world's safest and most healthy neighbourhoods. High densities allow much lower costs for supplying each household with piped, treated water supplies and most forms of health, educational and emergency services.

It is not so much the overall population density as the quality of the housing that is the problem; most squatter settlements have densities no higher than expensive central-city residential areas in Europe. Sanitation and drainage may be costly in cities, as complex systems are needed to cope with high densities and large population concentrations but city households can generally afford to pay more – and are prepared to do so if they get a good service.

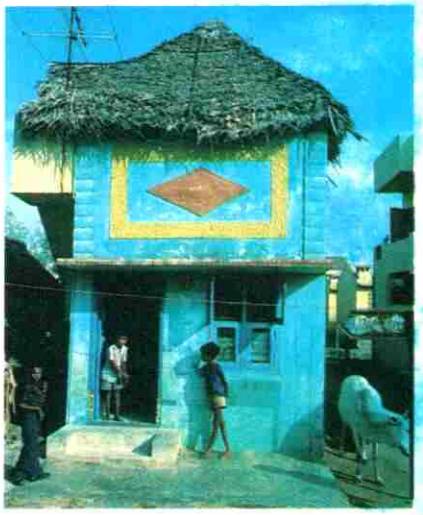
Cities may be considered ecologically unsustainable because of high consumption and waste levels but well planned and managed cities can combine high living standards with remarkably low levels of energy-

consumption, resource use and wastes. The concentration of people and production creates many more possibilities of collecting and recycling wastes and for walking, bicycling and a high quality public transport.

For many, city-life is one of excessive workloads and drudgery, yet cities remain centres of culture – including the visual and decorative arts, music, dance, theatre and literature. Most cities have a large reserve of young people on whose initiative and energy they could draw to improve conditions – yet most such people find that their cities offer them little hope and little prospect of employment. If cities have such potential to provide healthy, stimulating and valued places to live and work for all age groups, why do so few achieve this?

Supporting change

Much of the explanation is the lack of 'good governance'. Good governance in any city means encouragement and support from all levels of government for a great range of



Mark Edwards / Still Pictures

Above: Self-built house in Madras.

Below: Shanty homes between the water pipelines, Bombay, India.

Hartmut Schwarzbach / Still Pictures

investments of capital, expertise and time by individuals, households, communities, voluntary organizations and NGOs – as well as private enterprises. In most cities in the South, the total value of investments made by people in their own homes and neighbourhoods exceeds many times the total value of capital investments made by city and municipal authorities. Yet governments and aid agencies usually ignore (or deem illegal) most such efforts.

Most households who want their own home cannot afford to purchase one – or at least one that is legal. They cannot obtain housing loans so the cost of the house purchase can be spread over a number of years – as they cannot meet the (usually) inappropriate conditions set by banks or housing finance institutions. If they turn to building their own home – as most do – they have to occupy or purchase the site illegally. They often have to build on dangerous sites – in floodplains or on slopes with frequent landslides or mudslides – as the cost of safer sites is too high.

Even if they can qualify for a housing loan, most such loans are for finished houses, not for incremental construction. And even when they have developed their own home and neighbourhood into a viable residential area, governments usually refuse to provide these with roads, water

supplies, drains and other essential infrastructure, because they are 'illegal'.

What would cities look like today if governments had supported these individual and community efforts by ensuring that land, building materials, credit and technical advice were as cheap and readily available as possible? Or if government-community partnerships had been formed to, at least, improve water supply, sanitation, drainage and health care.

There are enough examples of innovative programmes to show how much more could have been achieved, if this approach had been more widespread. These include the Urban Community Development Office in Thailand and the work of the People's Dialogue and the South African Homeless People's Federation described later in this issue.

They include the work of the people in Orangi, a huge low income settlement in Karachi and the NGO, the Orangi Pilot Project that helped 70,000 households dig their own sewers and drains at a seventh of the unit cost that the municipal authorities would have charged them.

They include the remarkable range of community health, water, sanitation and child development initiatives developed in Guatemala City through partnerships between low income groups, different government ministries and international agencies. These last two "community" initiatives even received commendation from the Prince of Wales in a recent speech in Hong Kong. Although these are still "the exceptions" they give an idea of how much could be achieved, even where funds are limited.

Nancy Durrell McKenna / Panos Pictures

These work within what is often called the 'social economy' – the great variety of initiatives and actions that are organized and controlled locally and that are not profit-oriented. The social economy includes the work of citizen groups, residents' associations, street or barrio clubs, youth clubs, and parent associations that support local schools. It includes many voluntary groups that provide services for the elderly, the physically disabled or other individuals in need of special support. It often includes many initiatives that make cities safer and more fun – helping provide supervised play space, sport and recreational opportunities for children and youth. It may provide formal or informal supervision or maintenance of parks, squares and other public spaces.

As David Korten has pointed out, the social economy not only 'gets things done' but also creates a dense fabric of relationships that allows citizens to work together in identifying and acting on local problems. Its value to a 'healthy city' is enormous, even if it is often forgotten by governments and international agencies.

The capacity of city authorities to govern is not the same as the capacity to invest, since these authorities can do much to encourage and support the social economy. City authorities can often greatly increase the supply and reduce the cost of land for housing by changing inappropriate regulations, streamlining planning and land use control procedures and making better use of publicly owned land.

They can often improve the quality of public transport by providing the right framework for private firms; the much admired public transport system of Curitiba in Brazil is provided by private sector bus companies but within a framework set up by the city authorities.

City authorities should also have the main role in enforcing legislation on air and water pollution and occupational health and safety. This does not require large investments by public authorities, but it can do much to improve health and the quality of life in a city.

Hartmut Schwarzbach / Still Pictures

Good governance also means managing competing claims and finding common ground between enterprises, trade unions and residents about what should be done to make the city more healthy.

Identifying and acting on this common agenda is the core of the Healthy Cities Programme developed by the World Health Organization. Here, much of the 'health-promoting' action is taken not by ministries of health or health professionals but by individuals, households, communities, NGOs and enterprises – and the effectiveness of such action can be much increased with appropriate support from health professionals and city authorities.

H. Bradner / Panos Pictures

Achieving a healthy city needs a representative political system through which the priorities of citizens and businesses can influence policies and actions. Democratic structures remain among the best checks on the misallocation of resources by city and municipal governments. Actively involving a wide range of local groups in developing 'city governance' helps ensure that the different priorities of a wide range of groups are addressed.

In the lead up to Habitat II, the key issue is not so much identifying what should be done to achieve more healthy cities. This is well known. It is identifying how it should be done, especially how governments and international agencies can support a vast range of activities by individuals, households and communities that help build and maintain healthy cities – which to date they have ignored or even (for many governments) repressed.

David Satterthwaite is Director of the Human Settlements Programme at the International Institute of Environment and Development.

Left: Children recycling rubbish in Manila.
Left middle: Toy vehicles made from recycled waste, Nairobi, Kenya.
Left below: Child affected by pollution from Magnitogorsk steelworks, Russia.
Right: Self-build housing project, Madras.

Mark Edwards / Still Pictures

Helping women cope

***Ingar Brueggemann*, Secretary General of the International Planned Parenthood Federation (IPPF), outlines the special importance of reproductive health services for young people and women in the cities of the developing world.**

Women and young people tend to suffer most in the congested, unhygienic and ill-ventilated slum areas of developing world cities. With few rights of ownership to land or other resources and with limited opportunities for work, they are often physically, socially and emotionally deprived.

Lack of social support often leads to the break up of families and to violence, with large numbers of children turning to the streets to escape domestic conflict and the threat of abuse.

The options open to women to make money are very restricted, the risks to maternal and child health very high. In addition to factors such as malnutrition, typhoid, TB and sexually transmitted diseases, their lives are threatened by short birth intervals, teenage pregnancies, limited information and lack of access to antenatal and postnatal health services or trained birth attendants.

The condition of those living on the streets has a big role to play in shaping sexual behaviour. Sexual activity often expresses itself as something 'needed' by young people in order to 'feel good' about themselves. The experience of being physically desired equates to being emotionally loved.

But where young girls are abused, the feeling of humiliation can lead to drug taking or other self-destructive behaviour, even self-mutilation. Sex, often used for survival, frequently leads to exploitation and prostitution. The result, all too often, is very early pregnancies, unsafe abortions, HIV/AIDS and other sexually-transmitted diseases, with all the associated health risks to mothers and children.

Increasingly, governments and more especially non government organizations are trying to address these health problem.

Within IPPF, its member Associates are trying new approaches. The Indonesian Planned Parenthood Association, for example, has one of the first AIDS prevention programmes to include sexual health information within its street outreach work.

In the early stages, the distribution of leaflets and condoms was supplemented by group support meetings. Then, other activities were introduced as part of the risk reduction effort. These include sexual health workshops, a telephone 'hotline' and 'drop-in centre', free clinical services, recreational activities for sex workers, sports events and assertiveness training. As a result, condom use is increasing.

In Thailand, a peer-led programme is increasing sexual health awareness reaching out to young factory workers and girls working in city massage parlours. While in Rio, Shanghai, Mexico City, Kingston and many other cities, similar urban initiatives run by FPAs are springing up, with encouraging results.

Habitat II will hopefully emphasize the need to **collectively** find the best way forward to meeting the unmet needs of the unserved and underserved groups in the growing cities for reproductive/sexual health services. In doing so it should stress a few key points:

- Take intersectoral action, beyond medical care provision, and find new ways of increasing coverage of services, through pilot projects, alternative delivery methods, training of non-conventional service providers and education campaigns
- Create awareness of the reproductive and sexual health needs of the urban poor, among the public, policy makers and health professionals.
- Involve local people in their own sexual health care and treatment, taking their major concerns into account.
- Integrate family planning with economic, educational and social programmes for the benefit of young people and women.
- Focus on simple, inexpensive programmes which are likely to be effective and of lasting impact, while working towards a national pattern of integrated services for the poorest urban dwellers.

The sexual and reproductive health of those living in shanty towns and slums depends not only on a comprehensive range of reproductive health care services and skills, but on individual empowerment, a healthy environment and sensible choices in the use of scarce resources.

Mark Edwards / Still Pictures

Curitiba, capital of grain-rich Parana state in southern Brazil, is famous for its environmentally-friendly urban planning. Here **Cristina Cavalcanti** reports on the city's efforts to extend its success in the face of a growing population.

Brazil's urban labora

Viewed from the top of the Merces tower, the panorama of Curitiba is rich in visual texture. Skyscrapers stand side by side with one or two storey houses surrounded by neat small gardens. In between, woods and green areas mottle the landscape.

Seen from ground level, the colourful modern buildings of the municipal administration contrast with the plain architecture of commercial and residential buildings. Settled in a flat land and lacking natural and historical attractiveness, Curitiba has acquired identity and appeal at the hands of its architects and urban planners.

Its resulting quality of life has encouraged the natural growth of the city, which has doubled its population to over 1.3 million in the last 20 years, while retaining 52 m^2 of green area per inhabitant – more than double the amount recommended by the UN.

Indeed, urban planning is a tradition in the city. In the 1940s, wide avenues were built. By the mid-1960s, a contest chose Jorge Wilheim's urban project, which reoriented the city's expansion and gave priority to public transport. The implementation and improvement of Wilheim's project was done by Curitiba's Institute of Urban Research and Planning (IPPUC). Created for this end, IPPUC has guaranteed the continuity of urban plans and has become a generator for the city's ideas and administrators.

Jaime Lerner, three times mayor of Curitiba, since 1971, is the best known of IPPUC's sons. Among other things, he created the integrated transport system. With one ticket, the passenger goes from home to work in minibuses that connect each district to one of the 20 city bus stations. From there, the 'speedy' bus or 'ligeirinho' and other express buses leave at scheduled times, running along exclusive lanes that cross the city from south to north and east to west and stop only at their special tubular glass and metal stops, with level entry for passengers that includes elevators for wheelchairs. In the 'tubes' as they are popularly called, tickets are pre-paid.

Other bus lines connect the city's districts following a circular route.

Curitiba was the host of the last meeting of the National Committee for the UN Conference on Human Settlements, to be held in Istanbul in June. It was chosen because IPPUC's creative and cheap solutions for urban problems have given the city a role model in the national scenery.

Besides the integrated transport system, one of the main commercial streets downtown was turned into a pedestrian street. Following this, some other streets in the tiny historical centre were also closed. Recently, a 24-hour street was created, with shops, restaurants and cafeterias.

With pedestrian streets full of flowers, a good transport system, woods and parks and a spotlessly clean environment, thanks to a troop of sweepers working 16 hours a day, a multitude of tourists are attracted to the city, responding to an intensive official campaign. In 1994, tourism generated an income of US$ 280 million, or about 4 per cent of the city's net income.

The tourist route includes two accomplishments of the Lerner administration: the Wire Opera and the Free Environment University. The former is a round transparent theatre, with a tubular structure, located by an abandoned stone quarry, to which was added an artificial lake with a small cascade.

The Free Environment University, settled in a small woodland, is a dazzling round wooden building by another old stone quarry where, in another artificial lake, swans and ducks swim to the sound of Mozart and Vivaldi. Created in 1991, the Free University offers the general public short courses on environment management and protection. Among the clients that require specific courses are state and municipal secretaries, unions and professional associations and private and state companies from the chemical, energy and petrochemical and environmental sectors.

Curitiba has enforced the federal law that prescribes the decentralization of the country's health system. Its 86 outpatient posts, of which five are open 24 hours a day, offer general clinic,

paediatric and gynaecological care. For more specialized medical care, patients are sent to one of the 36 private hospitals that have a contract with the municipal Secretary of Health.

Maria das Dores Tucunduva, social worker at the Union of Health Workers of Curitiba, says health care is of good quality, but hard to reach, since patients can spend a whole day in hospital queues.

However, Dr Angela Kotizias Ribeiro, Director of the Health Planning Department of the Municipal Secretary of Health (MSH) says this problem is being solved with the creation of an Appointments Centre, through which outpatient post workers can make appointments with specialists by phone, saving patients a long wait.

Dr Ribeiro stresses that the concept that guides the MSH's work is 'health surveillance', by which health units are free to make plans according to the needs of each sub region. Besides preventive health measures, her department is designing a survey on female sterilization to discover the local causes of a national problem: 25 per cent of women of reproductive age assisted by the MSH have been sterilized. This in spite of the wide choice of contraceptive methods offered at the posts, that has contributed to the city's low fertility rate of 2.01 children per woman, even lower than the national rate of 2.9. Nevertheless, adolescent pregnancy is another factor the MSH will have to tackle: it reaches 17 per cent.

The city that calls itself the 'capital of ecology' has launched a programme of waste sorting, named 'Rubbish That Is No Rubbish'. Once a week, a truck collects paper, cardboard, metal, plastic and glass already sorted in the city's homes and sells them to private recycling companies. Organic waste is unloaded in a landfill site, where poor families comb through the garbage, looking for semi-rotten food and usable goods. According to Sergio Galante Tocchio, Municipal Secretary of Environment, the programme has extend the life span of the landfill site by three years.

The creation of the programme was preceded by an educational campaign in the media and schools. However, its effects can be felt mainly among the upper and middle strata of society. An example of the need for continuous education are the twin bins for food and recyclable items spread out in downtown corners and parks: their contents proves that rubbish sorting is still largely a dream.

A great part of the 300,000 inhabitants of the city's slums do not benefit from rubbish collection. Data from IPPUC shows that in March 1995, 57 per cent of the slums had no regular garbage collection. Since most of the slums spread along the rivers margins, the waste is thrown down the rivers that cross the city, contributing to pollution and to periodical floods.

Latin American cities are used to the sight of private waste collectors, who pull manual carts along the streets offering to buy newspapers, bottles and other used objects. Curitiba has seen the multiplication of these informal workers, and the city authorities have now turned their informality official, selling them the carts for US$ 20, on a monthly payment of US$ 2.

One of the thousand street collectors is Irani Lima da Silva, a 39-year-old ex-farmer who migrated to Curitiba 20 years ago. She lives in Jardim Savana, a slum built on a rubbish dump by 60 families. The slum's narrow alleys are covered with cardboard and wood boards, under which the garbage still secrets fetid water.

A mother of five, she bought a garbage cart from the municipality and sells cardboard, newspapers, aluminium and plastic for US$ 0.02 to 0.04 a kilo. By the end of the day, she can make 2 or 3 dollars, less than the national minimum wage of US$ 111 a month.

Sanitation is another controversial issue in Curitiba. Only 42 per cent of the city homes are served by a sewerage system. And only half is treated. To solve this problem, the municipality has created its own sewage company, taking the responsibility from the state government.

A solution is being tested in Bairro Novo, an area of 4.2 million m² on the south edge of the city. Since 1991, the Housing Company of Curitiba (Cohab) has settled 10,000 families that used to live in slums close to downtown, in the new town.

Answering criticism that thousands of families have been moved to the area with no water, energy or sewerage services, Rafael Dely, ex-president of IPPUC, ex-president of Cohab and presently Special Secretary for Housing Policy in the State of Parana, explains that an alternative sewerage system is being tested in Bairro Novo. This septic tank filtration system will collect and treat the sewage from groups of about 50 families throughout the settlement.

Dely calls attention to the inevitable expansion of Curitiba towards the larger metropolitan zone, whose 22 satellite towns are mainly dormitories for Curitiba's workers and have not known its urban development. "For the first time, we have a state governor and the capital's mayor from the same political party, which will enable the design of a global development policy for the metropolitan region and for the state."

One of the measures to restrain the migratory inflow has been the creation of a 'Return House' in the capital's interstate bus station. There, social workers spot potential migrants and offer them free bus tickets to return home. In two years, the programme has sent 23,000 persons back to the countryside.

For the longer term the city has promoted the idea of the *Vila Rural* (Rural Town). Dely explains that this "aims to maintain the seasonal agricultural worker in the countryside. It consists of small rural properties, of 5,000 m² and a house, where the peasant will be able to farm for his family in between industrial jobs. The properties will cost US$ 8,000, financed in 25 years at US$ 40 a month. We expect to maintain this population as farmers for the next one or two generations. In the meantime, the cities will be planned to receive their descendants in the future."

In the first year, five *Vilas Rurais* have been built, there are 15 under construction and another 60 are being planned. Financed by the World Bank and the Inter American Development Bank (IBD), the State government expects to build 600 rural towns. By 1999, 50,000 families are expected to be settled, equivalent to 4 per cent of Parana's population or a quarter of its landless farmers.

If the IPPUC's team is successful in transposing to the State its achievements in the municipal administration, by the year 2000 Curitiba will have proved to be the seed of a revolution that will improve the development of the whole region.

tory takes the strain

Cristina Cavalcanti is an anthropologist and freelance journalist based in Rio de Janeiro, with a special interest in reproductive health and women's rights.

Homeless but no

With seven million shanty dwellers and a rapidly growing urban population, South Africa's housing problems are formidable. But a people's movement has begun to show results, as **Caroline Wheal** reports from Johannesburg.

Seth Fihlane is 24 years old and tired of moving. He's been evicted seven times in 18 years and has just moved to Khaya-lethu, a settlement near Johannesburg, where he shares a shack with his grandmother. He's unemployed so they survive on her meagre pension.

Fihlane is not alone. An estimated seven million people in South Africa live in these 'informal settlements' – squatter camps – and that number is set to grow as more rural dwellers flock to urban areas, escaping drought and seeking jobs. The problem is compounded by illegal immigrants from Mozambique, Zimbabwe and Malawi – about 5 million – who are fleeing drought, economic difficulties and political oppression in their own countries. These refugees come on top of an already frightening growth rate: Africa's population is projected to double in 23 years.

But Fihlane and many others like him are part of an organization that is tackling this seemingly intractable problem. About five years ago, the South African Catholic Bishops Conference sponsored a week-long workshop for about 160 homeless to discuss their plight. Those who attended then took ideas back to their communities and a people's housing movement was born. Today, more than 10,000 families nationwide belong to the Homeless People's Federation, an umbrella for the groups started in each community. "Housing by the people and for the people" is the Federation's philosophy. So far that philosophy has changed the lives of 128 South African families who now live in small brick houses where they once had corrugated iron shacks.

The Federation's administrative support arm, the People's Dialogue, helps negotiate for land rights, takes care of paperwork and wades through Government red tape. There is a continuous battle to convince the Government to release subsidies for first-time homeowners directly to the people who need them, rather than through the usual complicated channels of bureaucrats, consultants and developers.

The engine driving each branch of the Federation is its housing savings scheme, which is usually run by the women of the community. Shack-dwellers save whatever they can afford – 50 cents, R1, R10, R50 – a day or a week. The treasurer enters each amount in the person's savings book, as well as in the central ledger. There are about 250 housing savings schemes throughout the country with a combined savings of about R350,000 ($60,000). A simple loan system in conjunction with the savings scheme lends members small amounts for crises or small business ventures, helping them develop a borrow-and-repay ethic.

Caroline Wheal

Above: Building the post office.

Right: Two members of the self-build Kanana housing scheme.

The Utshani (the word means "grass," as in grassroots) Fund is the revolving home-loan fund that actually lends Federation members enough to build. There is no arbitrary amount that members must have saved before they can take out a home loan. Rather, each person is evaluated according to how long he has been a member of his community's Federation, how regularly he attends meetings, past saving habits, and generally how trustworthy he seems to the local convenors.

"More than collecting money, these schemes are collecting people and bringing trust to the community," says 'Mama' Iris Namo, Director of the People's Dialogue office in Johannesburg. It seems to be working: no one has defaulted on a loan since lending began in January 1995.

Such initiative on the part of people who are, by most standards, at the bottom of the ladder, has attracted attention in the form of foreign donations and promises of Government aid. After seeing a model house, former housing minister Joe Slovo pledged R10 million (about $1.8 million) to the Utshani Fund in 1994, just before he died. Although the new minister, Sankie Mthembi-Nkondo, has assured the group that this promise will be honoured, the money is a long time coming and spirits are falling. Says Namo, "We've waited 300 years for justice; now, with our own Government, we expect miracles."

With its ambitious goal to put home ownership within reach of all its members, the Federation apparently expects no less of itself. The true miracle is that the houses built so far have only cost an average R7500 ($1300) each. How do they do it so cheaply? "Letsema," says Namo with a smile. The Sotho word basically means the age-old practice of barter. Bricklayers and plumbers within the community will often contribute their skills in return for something they need.

Raboroko's dream

Pule Raboroko is 37 and has been unemployed since he lost his job in the mines 8 years ago. Until last year, he was a 'backyard dweller,' living in a shack on someone's property at a rent he could not afford, subject to the whims of the landlord.

In April 1994, just two weeks before South Africa's first democratic elections, Raboroko rallied people around the idea that when they went to vote for Nelson Mandela, they should do so as landowners. He had noticed an unused tract of land near the official township of Sebokeng and took matters into his own hands, allocating plots to those who showed up with all their possessions in tow – a sign he took to mean that they were serious. Today 2300 families (of 5 to 14 members) live on this former

t helpless

Caroline Wheal

wasteland, now called Kanana.

Shacks cobbled together from a patchwork of corrugated iron, cardboard and wood are laid out in neat blocks, each with a number stencilled over the door. Water has been supplied by "invading" existing lines and putting up 74 taps. Outside, children play, mothers stoop over tubs of washing and people gather in groups to chat. Some of the yards have been fenced and flowers planted. Small vegetable patches sprout bright green against the red dust.

Raboroko now chairs the Kanana residents' committee and is active in the Federation. While the community is without electricity, he sells paraffin and candles to make money. Although he is not happy about invading land and asking questions later, Raboroko believes that laying claim to land is the first step towards government by the people. "That's what RDP is all about," he says, referring to the new Government's Reconstruction & Development Programme, which aims to provide all South Africans with the basics of shelter, work, education and healthcare. "You have to do something. You can't just wait for the Government," he says. "Land in South Africa is not a problem. The problem is getting that land to the people."

The People's Dialogue has been helping this new community negotiate with the Transvaal Provincial Administration, the Government body that owns the land, for land tenure and water rights. In the meantime, the housing savings scheme is flourishing and there are plans to build Kanana's first 10 houses. A demo house has been constructed, and a post office and clinic are under construction. Raboroko explains why he dreams of having his own place: "A house is not only a place to live; it is your identity. Pride and happiness come from a man who can say, 'This is my house.'"

The model house, 52 square metres, stands in the middle of town. It's not finished yet but it is already a source of great pride for the community. Tacked to the walls inside are drawings of the finished product from all sides; a floor plan showing two bedrooms, living/dining room, bathroom and kitchen; and a list of costs (1000 cement blocks – R1500; 16 window frames and panes – R1220; 53 bags of cement – R903.50) adding up to R7503.89. Once they get their own brick-making equipment, that total should drop to about R5000.

Like all grassroots organizations, the Federation and People's Dialogue are desperate for funding to carry on. People have embraced the idea of owning their own homes to such a degree that the Utshani Fund is stretched to capacity while administrative costs and demand for transport vehicles are increasing.

Striving for respect

Finances apart, the people involved are also striving for recognition and respect from the Government. "Our Government can't realize that we can do it," says Raboroko. Although Kanana residents want representation in local government they are against having a spokesperson from outside. "We want someone who is suffering like us, who is feeling pain like us," says Raboroko. He acknowledges that this is going to be difficult as "the Government regards us as being like our shacks – useless. Without a house I am nobody with no rights, no say."

Federation members are also adamantly against continuing their forced nomadic existence: "We are not prepared to move again. No one, not even President Mandela, will move us," says Simon Ntikane, deputy chairman of the Kanana residents' committee.

When asked what has changed with the new Government, the criticisms of before seem less damning. Yes, the new Government may not be acting with the speed they would like but it is still a vast improvement over the old regime. "We are allowed to negotiate for anything we want. We know that the people now have a voice, that the Government is for the people," says Fihlane.

"We cry with one voice so that we can be heard," says Mrs. Mmathabiso, another resident of Khaya-lethu. "We are saving our money; we are not helpless," she adds. Her fierce pride in what they are doing is echoed by Eliot Vethanda, a young man who has been living with 600 others in shacks in Mayfair, a Johannesburg suburb, since February 1995. There is no water, no sewerage facilities and the authorities are trying to evict. He stands nervously at a community meeting and says, "We are trying by all means to communicate and get advice. We are not helpless."

Although these people are finding solutions by themselves, it will take a major national effort to solve the problem of homelessness for all South Africans. Iris Namo agrees that the Government of the 'New South Africa' is very much in the first stages of establishing a workable system. It is also a matter of changing how banks lend money. At the moment, banks are geared to the old 'no collateral, no loan' philosophy – one that does not help those at the homeless level. In Pakistan, India and Israel, for example, a poor person can sometimes get a loan if he brings five friends to co-sign. In some cases, the South African Government guarantees to back loans for five years but this is by no means a perfect solution as banks are then concerned about what happens when that time is up.

The Ministry of Housing is currently putting together task teams, made up of representatives from provincial Government and NGOs, to tackle the issue. The People's Dialogue and Homeless People's Federation have been invited to participate and will undoubtedly do all they can to help the Government fulfill its election promise of shelter for all.

Caroline Wheal is a freelance journalist based in South Africa and a former staff writer with the Cousteau Society.

Bombay is the fifth most polluted city in the world, with a minimum of green space. Yet it is the site of two of the most imaginative clean-up projects to be found in India, as **Charlie Pye-Smith** reports.

Charlie Pye-Smith

Building green islands in Bombay

When I arrived at Mahim Nature Park, towards the end of a typically sweaty Bombay day, a group of 20 street children were playing games, laughing and shouting, beside the environmental education centre.

Early that morning they had been picked up off the streets where they live, hustle, eat and sleep. Soon they would be dropped back on the streets again, but at least, for this one day, they had been given a taste of the natural world. For many of them, this was the first time they had ever ventured away from the grime of poverty of the slums.

Less than 15 years ago the 37-acre Mahim Nature Park was a treeless garbage dump, with sprawling slums to one side and a polluted creek to the other. Today it provides a rare oasis of green and an important educational resource, not just for the urban poor, but for school children and college students throughout Bombay.

When the local authority called for ideas to develop and improve this part of the city in 1977, the World Wide Fund for Nature (WWF) promoted an ambitious scheme which would tackle pollution in Mahim Creek, clean up the garbage dump and create a much needed green lung.

"Bombay is not only one of the most polluted cities in India," explained Mrs Shanta Chatterji, the key inspiration behind the Nature Park, "it's also one of the most overcrowded. In London you have seven acres of green space for every 1,000 inhabitants. Delhi has four acres. Here we have just 0.03 acres."

I first met Shanta in 1992 when the Park was still in the process of creation. The garbage had been levelled, covered with topsoil, contoured and planted, but the trees and shrubs – some 12,000 in all – were barely above chest height, and the education centre had yet to be completed. Now the woodlands are semi-mature, over 60 species of bird have taken up residence and for five days each week the Park and the Education Centre are host to parties of school children, as well as adult groups from industry, the police force, the hotel business and other walks of life. Between April 1994, when the Park opened, and September 1995 over 9,000 people visited the Centre.

Charlie Pye-Smith

One of the things that impresses the visitor most is the thought and care which has gone into the planning of the Park. It is much more than a green space. It has been designed as an outdoor laboratory with trails which traverse a broad spectrum of habitats, microcosms of the ones found in the neighbouring state of Maharashtra.

"We are also very keen to stress the importance which nature has in Indian culture," explained Dhiren Pania, the Park's Programme Officer, as he led me through a shady area of woodland. "We teach the children about the reverence for nature which is found in Hinduism and other religions." So the children learn not only about ecological functions of particular species, but about the part they have played in myths and rituals, in astrology and medicine.

Western-style health care, with its heavy reliance on synthetic pills and potions, now threatens to displace the ancient tradition of herbal medicine, but here, a WWF botanist has bucked the trend by establishing, at the heart of the Park, a garden with over 105 species of ayurvedic plant.

As we walked along the neat herb beds, Pania explained their curative properties: plumbago for fever; tumeric as a blood purifier; periwinkle for cancer; asparagus and mother-in-law's tongue for gynaecological problems. Visitors can buy seedlings to plant in their window boxes and dried herbs with which they can prepare their own infusions.

One of the messages of Mahim is that individuals – as well as governments, organizations and businesses – have a role to play in improving the

Left top: Port Gardens, Bombay.
Left middle: Medicinal herb garden.
Right: Street Children at Mahim Park.

urban environment, and it is a belief in the importance of joint action which has led Shanta Chatterji to initiate another project, which has become one of the most radical clean-up operations ever seen in a Third World city. Bombay's commercial heartland is about to be transformed into 'Clean Air Island'.

Clean Air Island covers five square kilometres of downtown Bombay: roughly rectangular in shape, three sides are surrounded by the sea, while the other – not much more than a kilometre across – separates the business district from suburban Bombay. Some 200,000 people live here, but every day a million more commute into work at the 25,000 business establishments. Virtually every major company in India has offices here, and the area also has two major railway stations, the vast Bombay port, a variety of government institutions and industrial concerns, the Stock Market and over 20 colleges and schools. Like the rest of downtown Bombay, the area suffers from smog for over 120 days a year. "Up to 70 per cent of pollution comes from vehicles," explained Shanta, "and our main aim is to reduce this pollution by significant amounts."

The war against pollution is being waged on three fronts. First – and this is where individuals can get involved – a programme to green the city has been launched. "This means planting trees wherever we can," said Shanta, "but we have also got to think vertically, and we are encouraging people in flats to plant pots on balconies and windowsills."

At ground level, the Bombay Port Trust has already transformed 11 acres of wasteland into a public park and the Navy has set up tree and plant nurseries on islands in the Bay. These nurseries will provide plants, free of cost, for householders and office workers.

The project is also tackling the refuse problem. Householders and businesses are being encouraged to separate their waste into its various constituents – paper, plastic, organic matter and so forth. The rag pickers will recycle the paper, while organic waste is already being despatched to three collection points where it is broken down by vermiculture.

Under this last process, worms create an aerated atmosphere which enables bacteria to flourish and devour the refuse. The end result is a compost which is ideal as a planting medium. To prove the point, Shanta showed me the pots on her balcony, each with its own community of worms: "All our organic waste goes into these pots – vegetable peelings, fat, leftovers from meat dishes, whatever. This is just one of the ways we are getting people involved in the project."

At present 40 lorry-loads of refuse leave downtown Bombay each day. Within a few years, thanks to the vermiculture and recycling programme, all refuse will be dealt with in Clean Air Island itself. This will undoubtedly help to reduce vehicle pollution.

The third line of action against dirty air is the most ambitious. Sixty per cent of all vehicles in India are government-owned. They are often the worst maintained and the most polluting. Clean Air Island's organizing committee hopes to wean public agencies and utilities off petrol and diesel vehicles. The future will be electric.

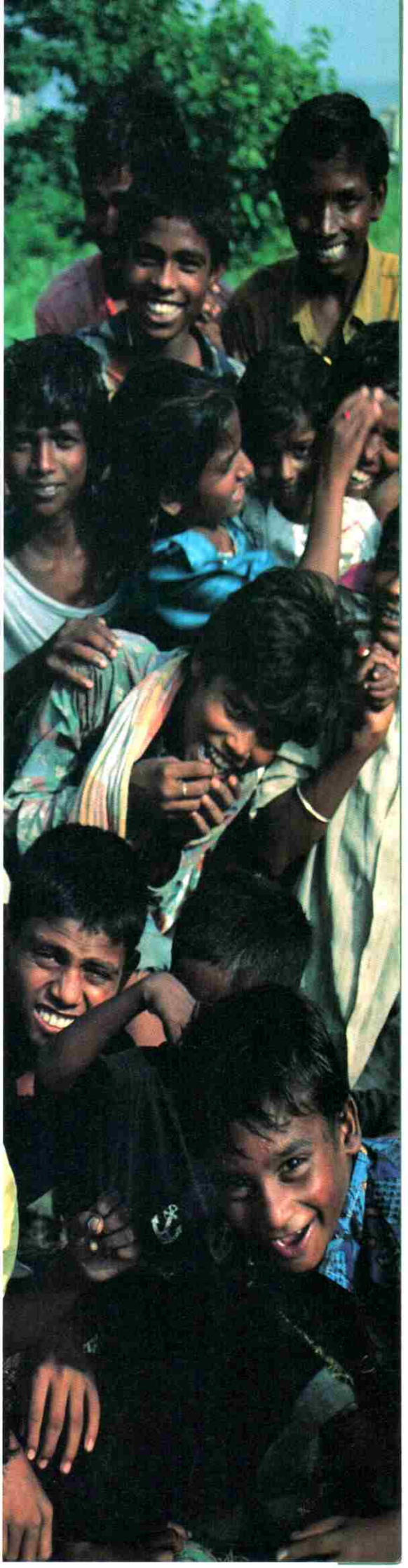
Shanta Chatterji has a vested interest here, for she and her husband run India's foremost electric vehicle manufacturer. However, there is no denying that the introduction of 350 electric buses, taxis, dust carts and transport buggies – this being the target for Clean Air Island – would transform Bombay's air. Emission of gases, such as carbon dioxide, would be significantly less.

But is this a pipe dream? No, insists Shanta. The greening of Clean Air Island is well under way. Finance is still being sought for the electric vehicles, but the plan had received widespread support from the relevant authorities. Indeed, central government is thinking of setting up similar schemes in other Indian cities.

A quick glance of the members of Clean Air Island's organizing committee suggest that this is an idea whose time has come. The list reads like a 'Who's-Who' of Bombay. With this sort of backing, Clean Air Island should become just that.

However, as Shanta Chatterji stresses, environmental programmes such as Mahim Nature Park and Clean Air Island are joint ventures. Governments cannot go it alone; nor can individuals. It is for this reason that Shanta attaches as much importance to encouraging flat owners to practise vermiculture on their balconies – she has even designed a three-tier medicinal herb garden to house the worms – as she does to getting the local utilities to switch from diesel to electric vehicles.

Charlie Pye-Smith is a writer on environmental issues and co-author of *The Wealth of Communities*, Earthscan, 1994.



Charlie Pye-Smith

Making dreams

Sung Vieng with her rubbish collection cart

come true in Bangkok

Peter Charlesworth

Rampant development in the Thai capital of Bangkok has left 1,000 slum communities out of account. But now an imaginative government initiative, with enterprise leadership, has brought new hope to the city's poorest million. **Peter Charlesworth** sent these words and pictures.

Sung Vieng's life has changed since she bought her own motorcycle powered rubbish collection cart. "I used to pick up discarded vegetables for my three children from the floor of the local market after it had closed," she said while unloading stacks of empty cardboard boxes from her tricycle cart. "Now I can buy meat and vegetables like all the other shoppers," she added proudly.

Two years ago Sung Vieng used to rent a pedal-powered cart and was lucky to make US $4 a day buying scrap paper, metal and other recyclable trash. Owning her own vehicle was an impossible dream. No bank would have talked to her about a loan and local money lenders would have charged her in excess of 240 per cent per annum.

That solution changed when the Thai Government took a unique step to help the urban poor. It set up an Urban Community Development Organization (UCDO), with authority to give income generating loans to poor people. With no collateral Sung Vieng was able to borrow $600 for her own motorised cart. "My income has doubled," she said with a smile.

Like Sung Vieng, almost 12 per cent of Bangkok's eight million people live in the 1,000 slum communities dotted around the city. While Bangkok's skyline has been transformed in recent years, with a constant sprouting of glassy office towers, fancy hotels and innumerable condominium projects, the rapidity and unplanned nature of this development has had its price.

There is little doubt that the Government and much of Thai society is keen to keep this prosperity drive at full throttle even if it means that many human, environmental and community development issues are left far behind.

Bangkok's infamous traffic nightmare may be the most conspicuous affliction of an economic growth rate that is still running at over 8 per cent, but a serious pollution problem, a lack of infrastructure and a breakdown in Thai society's traditional structures have all contributed to the city's woes.

The Urban Community Development Organization was established by the Thai Government in 1992 after various studies concluded that in order to help the urban poor, a fund was required to finance community organizations. Armed with a budget of US $50 million, the UCDO has set about its aims of increased and secure incomes, appropriate housing with secure rights, improved environment and better living conditions for those left behind by Thailand's wild economic development.

Somsook Boonyabancha, who participated in the initial study groups and has worked as Deputy Managing Director of UCDO since its inception puts it this way: "We need to find a way to make social development more efficient and more in balance with the runaway economic development."

By using a mechanism of 'credit' the UCDO has already benefitted over 13,000 families in 160 communities with loans totalling US $16 million.

Of the range of different credit schemes provided by the UCDO, housing loans have proved to be most important. "One of the most fundamental problems for the urban poor," explains Somsook, "is a conflict of interest between the landlords who have the might of money and the law on the one hand, and the landless poor who have little but insecurity and the threat of eviction on the other."

With over 70 per cent of Bangkok's slums located on privately owned land, Somsook feels that in an ideal situation the Government should be acting as intermediatory between the two parties to help form compromises such as land sharing, "however the Government has far too much vested with economic development and thus the landlords." Without doubt the UCDO has helped fill this void. As Somsook puts it, "we are an alternative institution with a somewhat ambiguous role, we are a bit like a NGO, yet we are in reality a part of the Government."

Somsook sees UCDO's ultimate success in instances whereby loans or deals cut with landlords have enabled urban poor communities to purchase all or part of the land they occupy or to relocate and build on other land which they then own. She claims that the security of land-tenure combined with community-based management structures has led to some remarkable changes in the communities' development."

The UCDO may have provided the loans and may have helped bring the players together," Somsook explains "but the communities did the rest themselves. They learnt from it, they became stronger and they are now the core of their own development."

A former architect, Somsook Boonyabancha reflects that in the past she was trying to fit people into her designs, "now I am more concerned with finding out about people's way of living and can thus help them make housing to fit their needs. This is a far bigger challenge than being an architect."

"My philosophy," continues Somsook "is that you must shrug off the reality of an economic development that leaves so many people behind; economic development is a fact. The challenge is how to create a situation, a process, whereby people can change their own lives and gain strength in the process; this is the solution."

For Sung Vieng's community the solution is simple, a loan from UCDO so that they can buy their own land just north of Bangkok. The small community of garbage collectors soon faces eviction from the dusty lane, near one of Bangkok's main roads. Once overgrown fields, the area has become sought after real estate. "Maybe soon another of my dreams will come true," said Sung Vieng "I will own my own house."

Peter Charlesworth is a freelance writer and photographer, and *People & the Planet* correspondent in Thailand.

Peter Charlesworth

Peter Charlesworth

All over the developing world urban people are finding ways of growing their own food. In some Chinese cities over half the food is grown within the city borders. Here **Diana Lee-Smith** of the Mazingira Institute tells the story of city farmers in Kenya and calls for national policies which will help them be even more productive.

Time to help the city farmers of Africa

Against all the odds, Wairimu Kinuthia, a grandmother living in a crowded and unserviced squatter settlement in Nairobi, is a farmer. She grows maize, beans and potatoes, as well as Kunde, a local green – and very nutritious – vegetable.

Wairimu lives in a shack in Korogocho, which she built after her husband divorced her. The daughter of a farmer, she moved to the city as a girl, when her father found his land was too small to keep a growing family.

Like almost one-third of the urban population of Kenya, Wairimu is able to supplement the meagre diet of herself, her three children and one grandchild from a scrap of land, in her case from the plot on which her shack stands. She sublets one room, and in another, which is not yet finished, she keeps four goats for fattening. She also sells vegetables in the local market. Some of these she grows herself, others she buys wholesale. Her son sells second-hand clothes in the local market.

Although the land in Korogocho is not formally owned, a council of elders allocates plots to the needy. Often this means woman-headed households, like that of Wairimu after her husband left her in 1977. Now the place is full up and there is no space for new plots, but the tenant population keeps growing as people like Wairimu sublet rooms for a living.

People who have their own plots are better off because they get income from rent but also because they have been able to find a piece of land to grow crops on. Very few people in Korogocho were there early enough to find such a space, and even that is far away, near a stadium at the edge of the city.

As the city population grows, it is harder and harder for the urban poor to find land to farm because it gets allocated to other uses. Tenants in an area like Korogocho generally eat less often. Wairimu and her family eat three times a day, but some families only eat once a day or less.

In 1987, a study by the Mazingira Institute found that almost one in three urban households in Kenya farm crops in town. However, while middle income earners can grow food in their backyards, low income earners lack space and farm on public land when they can find any.

The average size of an urban farmer's plot in the capital, Nairobi, was tiny, under 100 metres square, less than a quarter of the size of those in smaller towns. And yet the average productivity of urban farm plots in Kenya is higher than that of rural plots, and is highest in the capital at 9,000 k/ha. In general the larger the town, the more organic inputs are used. Most urban farmers are too poor to buy fertilizers. However, the most important input is water, more easily obtainable in towns than rural areas, and used by two-thirds of urban farmers in Nairobi.

Manure is used by one third of urban farmers in Nairobi and about the same proportion use compost which they produce themselves, but a few exchange compost through informal barter or gift from friends. Compost is even sold on the market. Manure is also exchanged through barter or gift between livestock keepers and crop farmers in Nairobi. Other inputs like mulch and chicken droppings are used as well. Urban farmers both produce and exchange organic inputs, and the larger the town the more informal exchange in inputs there is among the community of farmers.

Davinda Lamba

Above: Wairimu Kinuthia tending her plot of land.

Below: City farmers of Nairobi, Kenya.

Other products in the subsistence system in Nairobi include hay harvested from ditches and vacant land, firewood gleaned from unused land and building waste, refuse used for animal fodder, and traditional vegetables, which are gathered from the wild and eaten by three quarters of all households in the city. No less than 79 different varieties of such vegetables were named by residents in the capital city. These are used in cooking dishes originating from different areas, and a trade has

Davinda Lamba

grown up shifting them to the capital (and to other towns) to feed migrant populations. Many of these vegetables are rich in protein and resistant to disease.

The total volume of crops produced in all Kenyan towns in one season in 1985 was estimated by the Mazingira Institute to be 25.2 million kg, worth about 60.9 million Kenya shillings (approximately US $4 million at the 1985 exchange rate). The estimate for Nairobi was 11.3 million shillings per season. This is significant, especially since there are two growing seasons in a year.

However, just under half the urban population said they had no access to land, either rural or urban, where they could grow food. And 40 per cent of the urban farmers interviewed said they would starve if they were stopped from doing it. The urban poor have been identified as one of the groups with nutritional problems in Kenya, yet little has been done to address their needs. Urban farmers in Kenya operate entirely outside the formal system of local government, finding their own ways of feeding themselves. They do not even get the agricultural extension services that rural farmers get.

Yet it would be comparatively easy to incorporate crop and livestock production into urban planning, by allocating land temporarily to this use, and extending support to urban farming on road, rail, river and power line reserves, which is where the urban poor mainly farm. Such physical planning measures supported by local government services would immeasurably help the urban poor.

More improvements in productivity could well be made through more efficient use of urban surface water drainage and city refuse for example. Recognition of and planning for urban subsistence farming could support the initiatives which residents like Wairimu Kinuthia are already taking to make African cities more sustainable.

Diana Lee-Smith is one of the founders of the Mazingira Institute established in Kenya in 1978 to encourage equitable development and environmental sustainability. She has been the editor of *Settlements Information Network Africa* (SINA) since 1981 and the Secretary of Habitat International Coalition Women & Shelter Network from 1990 to 1995.

Growing green

Much of the challenge to urban food security must be met in rapidly growing and urbanizing Sub-Saharan Africa, *writes Luc Mougeot*.

The number of countries unable to meet national demand with their own production, and the numbers of food insecure within these countries, may continue to rise, if environmental degradation, conflict over diminishing natural resources, rural-urban migration, land concentration and gaps between urban rich and poor worsen.

Food imports by Sub-Saharan cities already represent a large share of all urban food supply and are likely to grow. However, such imports may not improve the food security of most city dwellers. The more nutritious food produced domestically or imported and sold locally may reach a small upper-income market, while cheaper bulk-food imports of lesser protein value and variety will be aimed at the lower-income market.

In this context, one trend is very likely will grow with urbanization deep into the next century: food production within and fringing cities themselves.

Already, an increasing supply of vegetables, fruits, small livestock and dairy products, and even of beans, grains, rootcrops and cattle meat, Is being catered for in this way. This is particularly well established in East and South East Asia. It is expanding in Latin America, and even more so in Sub-Saharan Africa. Urban agriculture is already being practised by about 200 million people and supplies food to around 700 million.

Where it is practised, city farming has been found to make up a large share of urban households' food supply, benefit children's nutrition, save cash, even generate income and demand for other urban activities up and downstream. City farming is often one of the major employers. With little official support it has already grown into a multi-million dollar industry in surveyed cities.

The currently diverse array of urban farming systems is expected to further multiply, improve and disseminate (hydroponics, micro-livestock and other confined-space technologies).

More local authorities are becoming supportive of urban food production and this is expected to translate into more accommodating urban legislation,regulation and planning in the future.

We can expect more and more cities to reduce solid and liquid waste disposal through treatment to increase its reuse into food production.Urban forestry has particular potential in more polluted and dense urban environments. In crowded central cities, food production will intensify, meshed into architectural design and utility planning.

More buildings will exploit their roof and wall surfaces, solar energy and own heat and steam emissions. More will recycle their own effluents and organic waste and tap onto residents' or workers' spare time to grow green, thereby reducing discharges into municipal systems, supplementing occupants' own food needs, and generating leisure, savings, and even incomes in the process.

Back in the 1950s and 1960s substandard housing and informal employment sparked heretic reactions in official circles, only to be recognized later as indispensable to curbing urban problems. Urban food security is coming on the agenda of urban dwellers and again, more and more of them, not planners, are showing a common-sense response for everyone to see.

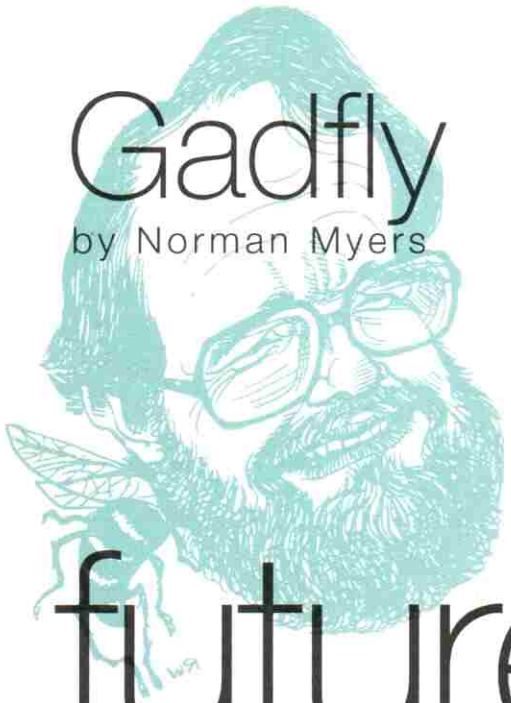
Dr Luc Mougeot is Senior Programme Officer responsible for urban environment management at the International Development Research Centre in Canada.

Sarita Kendall

Right: Harvesting turnips on a school rooftop, Bogotá, Colombia.

Gadfly

by Norman Myers



future shocks

By the year 2000, roughly half us will have become town and city dwellers. Within the space of just two generations, or one hundredth part of the time since we first started to live in cities, we shall have made a transition from being a basically rural to a predominantly urban community.

A radical change of this sort is known technically as a discontinuity, aka a non-linearity. Or, in plainer language, a sudden switch from one state to another. The stock example is what happens to water when it turns into ice or steam. Each of us has had experience of an absolute discontinuity, and of profoundly personal sort: when we were born (a related discontinuity awaits us). Economic discontinuities include the emergence of OPEC and the Stock Exchange's black Wednesday.

In the environmental arena, we should anticipate a host of discontinuities ahead. The future certainly won't be a simple extension of the past in light of the expanding niche of humankind and its multifarious activities. It behoves us to get to grips with the idea of discontinuities so that they won't take us so much by surprise – as is often the case, and to our distinct detriment. Why do they ever take us by surprise? Well, because environmental problems are often problems we have scarcely thought of. To cite Benjamin Disraeli, "What we anticipate does not regularly occur, while what we least expect often happens."

These surprise phenomena deserve priority attention. Yet science has hardly touched on them. For the most part, they remain black holes of research. If we had been more alert, we could surely have anticipated such abrupt changes in environmental systems as acid rain and ozone-layer depletion. In the eco-medical sphere we profess to have been surprised by the onset of AIDS, yet we could have guessed at its impending arrival if only because growing human communities were increasingly encroaching on undisturbed ecosystems (tropical forests) with their huge reservoirs of new pathogens. The only truly surprising thing about AIDS is that we were surprised.

Among environmental discontinuities of the recent past – phenomena that should give us a clue about potential future events – are: the bleaching of coral reefs with extensive morbidity and mortality throughout coral communities; mass mortality of dolphins and seals; phytoplankton blooms; cancer epizootics in marine turtles and fish; population declines among birds, especially North American and European migrants; and the fast-growing die-offs of frogs among other amphibians in many parts of the world.

All these examples share several characteristics. First, they cover hundreds or thousands (occasionally tens or even hundreds of thousands) of square kilometres, so they can reasonably be regarded as regional or even global phenomena. Second, they are unprecedented in our scientific experience and general ecological understanding. Third, there is no immediate or obvious explanation, although a primary or contributory culprit appears to be pervasive pollution. Fourth, we know next to nothing about what these perturbations reveal concerning further such phenomena engendered by "chemical time bombs". What we do know is that they presumably amount to a whole flock of miner's canaries singing with decibels of warnings.

These instances of sudden declines should prompt us to ask what other forms of biodiversity could be undergoing depletion of numbers in ways unidentified and undocumented. Yet we have no comprehensive effort underway to sample critical populations in systematized fashion, even though it would not be difficult or expensive to institute, for example, a fish tumour sampling programme for commercial fish catches around the world. Nor do we have any broad-scope information-gathering exercise on major pollutants. Still less have we mounted any on-going assessment of pollution stresses with respect to their capacity to reduce resistance to other stresses such as disease, temperature extremes and drought.

There are discontinuities in store in the economic sphere too. Consider unemployment in developing countries, where jobs famines are likely to be overtaken by "jobs starvation". These countries will need to create 40 million jobs every year merely to hold the line on unemployment (not counting underemployment). The United States, with an economy half as large again as the entire developing world's, often has difficulty in generating two million new jobs a year. The dismal prospect for the developing world is not a case of "The same as before only more so and worse so". It is "jump change" as compared with the past – and our policy responses will need to be similarly revolutionary.

But let us take heart from some recent political discontinuities of super-positive sort. Who in 1989 would have taken on a bet that by the year 2000 we would have got rid of the Berlin wall, the Cold War and the Soviet Union, and that President Mandela would be ruling a new South Africa?

Norman Myers is a co-recipient of the 1995 UNEP Sasakawa Environment Prize.

Associates' news

Mark Edwards / Still Pictures

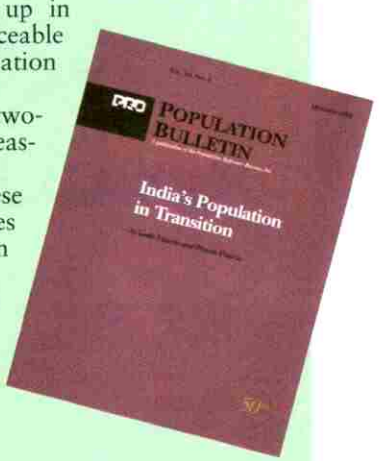
INDIA IN TRANSITION

India's population is likely to cross the one billion mark by the year 2001, and will increase to over 1.6 billion by 2045 under the UN median projection. This allows for a rapid reduction to replacement level fertility of 2.1 children per woman by 2015.

However, if fertility declines more slowly to only 2.6 by 2020, India's population could reach two billion by 2050.

These are the scenarios spelt out in *India's Population in Transition*, a booklet published by the Population Reference Bureau in late 1995, its 50th anniversary year.

Authors Leela Visaria and Parvin Visaria point out that while India's economic prospects have picked up in recent years, and there has been a noticeable decline in fertility, the momentum for population growth is tremendous with a third of all Indians below the age of 15.



At the same time, one-quarter of all Indians still live below the poverty line, nearly two-thirds of Indian women cannot read or write and there are not enough jobs for the increasing numbers of educated young people.

"The country's rapid population growth rate threatens to derail attempts to ease these problems and to raise the standard of living for its citizens," they say. "It also exacerbates severe environmental degradation and shortages of drinking water and arable land in many parts of India."

They say "the wisest course for the present may be to remain focused on the stated goal of slowing population growth while addressing the broader health and socio-economic needs of the people."

Contact: PRB at 1875 Connecticut Avenue, N.W., Suite 520, Washington, D.C. 20009-5728. Tel: 1 202 483 1100.

IPPF PRESIDENT

Liba Taylor / IPPF

Dr Attiya Inayatullah has been elected President of the International Planned Parenthood Federation (IPPF). Dr Inayatullah was elected to the three-year office during IPPF's Members' Assembly held in Manila, Philippines from 10-13 November. She succeeds Dr Fred Sai who has been President since 1989.

Dr Inayatullah has a long and distinguished history in the family planning movement in her country of origin, Pakistan, and internationally. For the past six years she has been the chairperson of the IPPF Central Council – the Federation's main decision-making body. She is also the President of the Pakistan Family Planning Association, and Chair of the Executive Board of the United Nations Education, Scientific and Cultural Organization (UNESCO).

Dr Inayatullah has held a number of positions in the Pakistani Government, including that of Minister of State for Population Welfare, and Adviser on Population, Welfare, and Women's affairs to the President of Pakistan.

In her acceptance speech, Dr Inayatullah said, "We must concentrate on women – who constitute the majority of the world's population – empowering them to be in charge of their own destinies."

For information, contact IPPF Public Affairs Department, Regent's College, Inner Circle, Regent's Park, London NW1 4NS, UK. Tel: 0171 486 0741 Fax: 0171 487 7897

SAVING THE PANTANAL

A plan to build a 3,442-km waterway across the largest wetland in Brazil, connecting two rivers and opening the way for sea-going ships to travel through Brazil, Bolivia, Paraguay, Uruguay and Argentina, has been greatly modified as a result of representations from WWF and other agencies.

A warning about the dangers of the project to the vast Pantanal wetlands was made in the WWF report, *Hidrovia Paraguay-Parana: Who Pays the bill?*, reported in *People & the Planet* (4/2) last year.

Last August, the Intergovernmental Commission on Hidrovia (CIH), the international body sponsoring the project, announced that it would alter its plans to take account of the protests.

Since then, the President of the CIH, Marcelo Jardim has promised that there will be no engineering work inside the Pantanal, and no dredging, straightening of river curves, or other construction that could harm the fragile wetlands located where Brazil, Bolivia and Paraguay meet.

WWF has pointed out that unless carried out with great care, the project will not only threaten wildlife such as endangered jaguars, hyacinth macaws and giant otters, but drain the Pantanal of 17 billion cubic metres of freshwater in the first year of construction.

According to wetland ecologist, Gonzalo Castro, there is still a long way to go until the Hidrovia blueprints are completed. "WWF will be monitoring the environmental impact assessment study and working closely with CIH to make sure it keeps its promises to spare this ecological treasure."

Sandra Charity / WWF UK

SEXWISE

A pioneering broadcasting project, comprising more than 130 radio programmes on sexual and reproductive health, was launched in January in seven South Asian countries by IPPF and the BBC World Service.

The joint initiative, entitled *Sexwise*, produced tailor-made programmes in eight South Asian languages, plus English. Each series is sensitive to local culture and beliefs. The languages are: Hindi, Tamil, Pashto, Persian (Farsi), Urdu, Nepali, Bengali and Sinhala.

IPPF's South Asia Regional Bureau, with its strong network of family planning associations (FPAs), helped develop the project. It has also contributed towards funding, along with the BBC and the British Government's Overseas Development Administration.

Illustrated booklets accompany the series. They will be distributed by FPAs, upon request. Programmes will be broadcast in India, Sri Lanka, Pakistan, Nepal, Bangladesh, Iran and Afghanistan.

Producers travelled throughout South Asia to gather material for the programmes. With guidance from local FPAs they interviewed specialists in sexual and reproductive health, government officials and people at home, in schools, colleges and family planning clinics.

BBC World Service Head of South Asia Region, Barry Langridge, commented: "More than 52 million people tune in weekly to World Service programmes in South Asia, so this initiative has enormous capacity to spread important messages in a region where reliable information on sexual and reproductive health is often in short supply."

Ingar Brueggemann, IPPF's Secretary General, declared: "This project comes at a most appropriate time. It is the first step towards communicating the messages on sexual and reproductive health as emphasized at the Cairo Conference on Population and Development and the Beijing Women's Conference."

POPULATION EDUCATION

Population Concern has produced a new pack for population education entitled *People: A Problem or an Asset?*

It presents guidance information, practical ideas and activities for teaching the controversial issues surrounding population change. Its particular strength is to guide teachers and students away from the 'number crunching' of some population education towards considering how population, environment and development issues are linked and are interdependent.

The pack contains a 32-page Teacher's Handbook plus 14 4-page leaflets.

Copies are available at £17.25 including postage and packing from Population Concern, 178-202 Great Portland Street, London W1N 5TB. Tel: 0171 631 1546, or Fax: 0171 436 2143.

BIRTH SPACING

An international group of scientists and policy-makers has endorsed a form of family planning for breastfeeding mothers, giving another option to help them achieve proper birthspacing. This form of family planning is called Lactational Amenorrhea Method or LAM.

"This action is a significant milestone for those concerned about the health of mothers and children," said Dr Roberto Rivera, corporate director for international medical affairs at Family Health International, a co-sponsor of the conference with The World Health Organization (WHO) and the Institute of Reproductive Health at Georgetown University.

LAM is very safe and more than 98 per cent effective. To use LAM correctly, a woman must be amenorrheic, within six months following delivery, and fully or nearly fully breastfeeding. When any of these conditions changes, another contraceptive should be used if the woman wishes to prevent pregnancy.

Breastfeeding contributes significantly to child survival, child nutrition, and to healthy birth spacing. More than 90 per cent of women world wide breastfeed, but some experts worry that the intensity and duration of breastfeeding are declining due to urban life styles and other factors.

It has long been known that breastfeeding can delay the return of fertility, but LAM provides a reliable way for women to use it as a temporary family planning method during the months following childbirth. Breastfeeding delays pregnancy because stimulation of infant suckling sends a signal to the mother's hypothalamus, which responds by decreasing the secretion of pituitary hormones needed for ovulation.

For further information contact, Bill Finger, FHI, PO Box13950, Research Triangle Park, NC 27709 USA. Tel: 1 919 544 7040, or Fax: 1 919 544 7261.

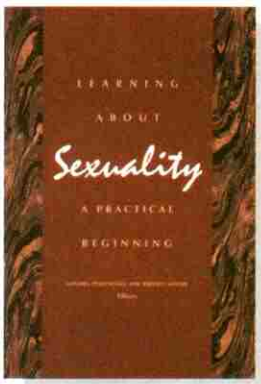
LEARNING ABOUT SEXUALITY

To stimulate further thinking and action about how problems such as sexually transmitted diseases, cervical cancer, and unwanted pregnancy are profoundly affected by the dynamics of sexuality and gender, the Population Council and the International Women's Health Coalition have just published *Learning About Sexuality: A Practical Beginning*.

The book is a collection of essays by social and biomedical scientists, family planning and reproductive health providers, and health activists from a wide variety of cultures willing to discuss openly the physical and psychological links between sexuality, reproductive health, health-seeking behaviour, and contraceptive practices.

Through their experiences, authors challenge widely-held, and potentially harmful assumptions, about individuals' attitudes and behaviour related to sexuality. They also provide research and approaches to understanding and coping with these issues.

This 404-page volume was co-edited by Sondra Zeidenstein, a writer and editor with a special interest in women-focused projects in developing countries, and Kirsten Moore, Programme Manager of Gender, Family, and Development at the Population Council.



Contact: The Office of Publications, The Population Council, One Dag Hammarskjold Plaza, New York, NY 10017, or Tel: (212) 3390514, or Fax: (212) 755 6052.

PROMOTING AGENDA 21

Population was signalled as one of the key issues in the fight for sustainable development at the Earth Summit in Rio de Janiero in 1992, but has not featured very strongly in the follow-up to that meeting.

Now the UN Fund for Population Activities has listed its detailed activities in support of Agenda 21, the blueprint for action agreed in Rio.

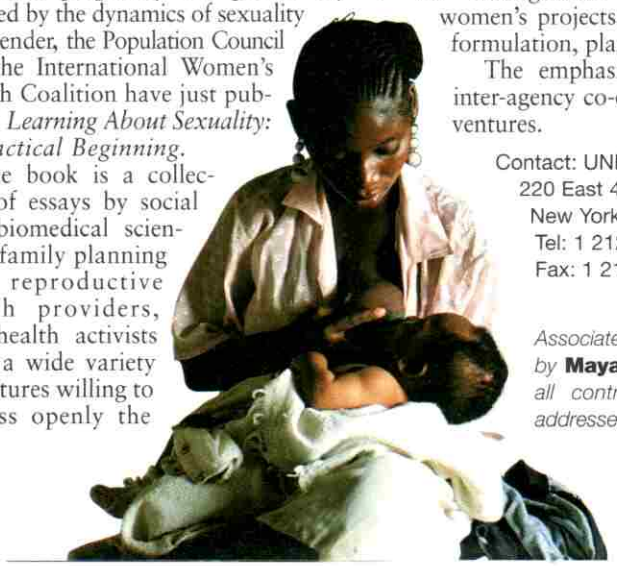
Entitled *Population in the 21st Century* the publication spells out its action in various programme areas including advocacy. This highlights among other activities, its collaboration with the World Conservation Union and other agencies in supporting this magazine.

In a concluding section, UNFPA says its assistance in the area of population and environment will focus on research and analysis, including country case studies; awareness creation and sensitization; integrated maternal and child health / family planning in environmental management projects; special women's projects; population policy formulation, planning and training.

The emphasis will be put on inter-agency co-operation and joint ventures.

Contact: UNFPA, 220 East 42nd Street, New York, N.Y. 10017,USA. Tel: 1 212 297 5026, Fax: 1 212 557 6416.

Associates' News is compiled by **Maya Pastakia** *to whom all contributions should be addressed.*

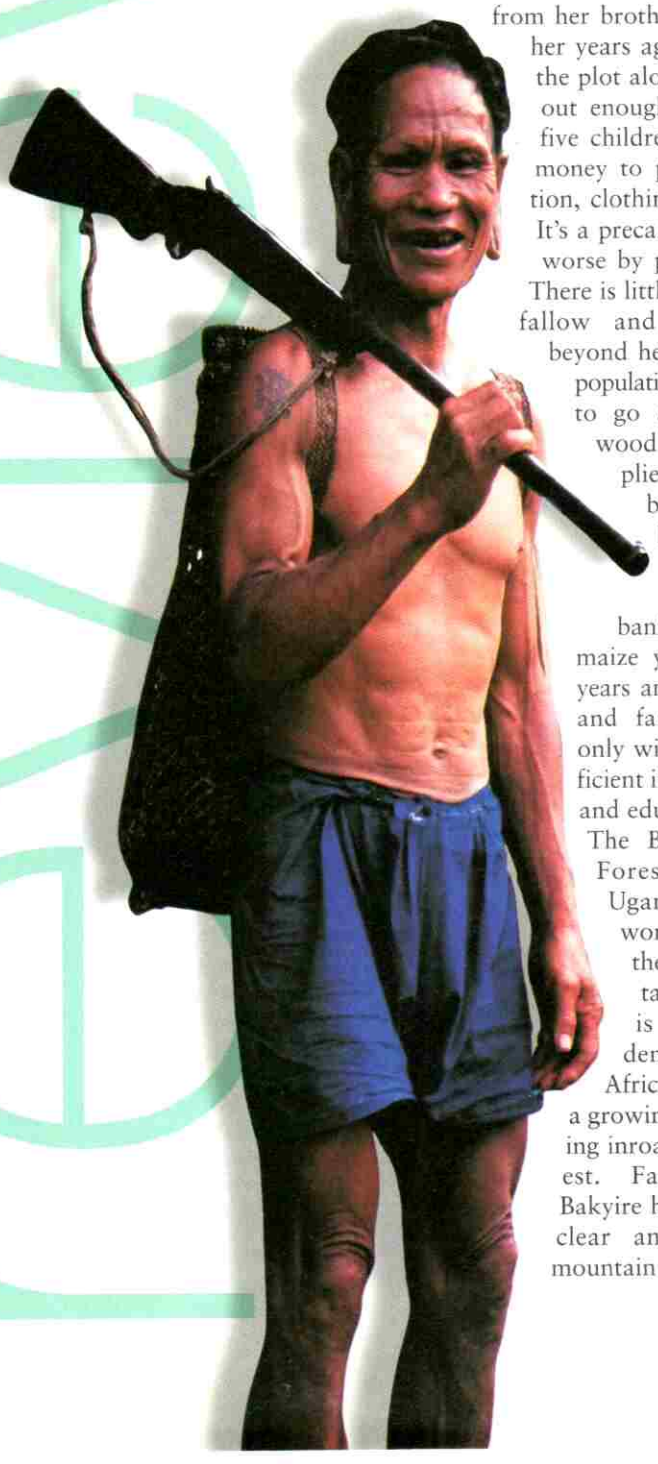


Caroline Penn / IPPF

Film: FIELDS OF TREES

The human dimension of agroforestry is highlighted in a new film made by the International Centre for Agroforestry (ICRAF), together with TVE. The film profiles four farming families – in Uganda, Zambia, Peru and Indonesia – all of whom are farming with trees.

Fields of Trees is an upbeat and compassionate story about farmers who are benefiting from the fusion of scientific research with ancient farming know-how, in the development of agroforestry farming systems – systems that can provide ample daily sustenance but can also safeguard the environment into the next century and beyond.



In Zambia, 33-year Jennifer Zulu farms a small piece of land loaned from her brother. Her husband left her years ago so Jennifer works the plot alone, struggling to eke out enough maize to feed her five children, and then to find money to pay for their education, clothing and medical bills. It's a precarious existence made worse by poor soil conditions. There is little spare land to leave fallow and fertilizer is way beyond her means. A growing population has meant less land to go around so that the woodlands that once supplied fuelwood are fast becoming farmland.

ICRAF has developed a system of planting fallow land with sesbania trees – doubling maize yields after just two years and providing Jennifer, and farmers like her, not only with fuelwood but sufficient income to feed, clothe and educate her family.

The Bwindi Impenetrable Forest in Southern Uganda, is one of the world's last havens for the endangered mountain gorilla. The area is one of the most densely populated in Africa, and, like Zambia, a growing population is making inroads deep into the forest. Farmers like Paulo Bakyire have no choice but to clear and farm the steep mountain slopes. But with the tree cover gone, the rich soils are soon washed away and farmers have to clear more forest after just a few years.

Across the valley, however, Goretti Muhoozi has planted trees along the edges of her terraces on the advice of agroforestry researchers. The trees protect them from erosion and provide her with fuelwood. Through her local self-help organization, the Two-Wings Agroforestry Network, news of the successful scheme is spreading, helping to ease the pressure on the forest and ultimately on the gorillas that dwell there.

Calimerio Perez is a recent settler in Yurimaguas, in the rainforests of the Peruvian Amazon. While he bemoans the poor yields he gets from the land he slashes and burns, his neighbour Jose Davila, who was born in the area, knows exactly which trees on his land should be nurtured for the useful and sometimes valuable products they provide. Meanwhile ICRAF is researching the benefits of such multilayered agroforestry systems including those that make provision for cattle grazing, one of the major causes of deforestation in the region.

Half a world away on the Indonesian island of Sumatra, Pa Hedrus farms the complex forest garden planted by his grandparents. A diverse mixture of trees and plants yield fruit, as well as products like damar resin – a substance widely used in paint manufacture – ensuring a regular supply of food and a good income. This may be the model for sustainable agriculture of the future, emphasizing diversity and integration of many trees and crops. But despite the success of the Sumatran forest gardens, policy makers are still trying to subject farmers to outdated policies governing production forest.

Agroforestry has vast potential as the sustainable farming system of the future. Introducing policies to promote it, the film concludes, is the key to making the future happen.

This 31-minute film is available in English, French and Spanish. A 15-minute educational version entitled *Farming with Trees* is also available.

Nick Rance

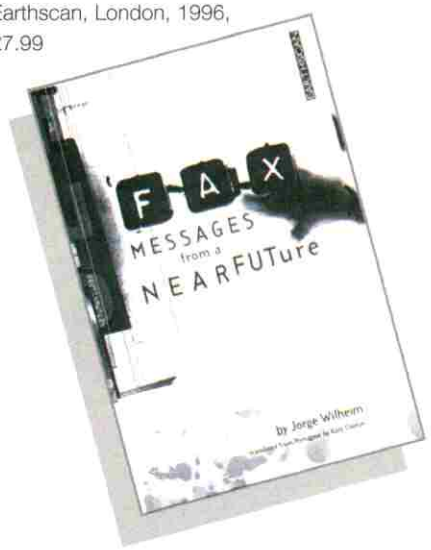
Fields of Trees and *Farming with Trees* are available from the Distribution Office, TVE, Prince Albert Road, London NW1 4RZ UK. Tel: 44 (0) 171 586 5526, Fax: 44 (0) 171 586 4866, Email: tve@dial.pipex.com

FAXES FROM THE FUTURE

FAX: Messages from a near future

Jorge Wilheim

Earthscan, London, 1996, £7.99



Want to know about our future? Easy. All you need is a fax machine. That is what the author of this book did and, hey presto, he found himself exchanging views and information with a colleague working in the 2020s.

And what a rewarding dialogue it was. It turns out that the current age is a jumping off point for a much improved state of human affairs. Yes – humanity has come through a 'transitional trauma' and has had the good sense to learn from its 20th century mistakes.

Technology has become a servant, not the master of humanity. Hydrogen powered cars, integrated goods transport systems, ecological waste water treatment, cellular medicine, and dietary innovations have all led to greater improvements in the human condition, and in the relationship between people and nature.

But there has also been a social transformation: After a period of turmoil early in the new century "everyone came together in favour of the consolidation of tolerance, of solidarity, of coexistence between cultures whose differences should be respected and valued."

Humankind in 2025 is mainly urban, but it has learned to build sustainable cities, solar powered with intelligent public transport systems, with waste recycling the norm, not the exception. People have learned to cherish the culture of cities, turning civility into their key frame of reference. They have come to realize that mutual respect is more viable than brutal intolerance.

Yes, and the new age is both global and local; people are all part of communities back home in the 'city state', but also of global networks of shared interests. No reason to be gloomy: humanity has managed to turn inspired, rational thought and action into its operating principle.

Want to know more? Well this book is in the shops. *FAX: Messages From a Near Future* is for all those who are getting bored with disco dancing on the decks of the Titanic. We can do something about that iceberg, but survival is a shared effort. For practical steps you'd better consult that nice young guide to a sane future who will speak to you from 30 years hence at the other end of the fax line. *Herbert Girardet*

Herbert Girardet is an author and film maker, and a consultant to Habitat II.

LOOKING AHEAD

The Gaia Atlas of Cities: New directions for sustainable urban living

Herbert Girardet

Gaia Books, England, 1996, £9.99

The environment is controlled by the cities; but the cities have little knowledge of the environment. This apparently fateful contradiction is an underlying concern of Herbert Girardet's book. He adds, however, a crucial qualification: there is an increasing amount of urban environmental good practice. To this, though, with one more turn of the screw, we must add: politicians, academics and the media display almost no knowledge of the good practice.

The Gaia Atlas is a presentation and exploration of these trends and possibilities. Girardet knows 'the literature' but, as film-maker, writer and activist, he also watches and listens as he moves around the world as an intensely curious traveller.

An account of the way cities function and have functioned is the first part of his three-stage presentation. The historical dimension – from, so to speak, megaliths to megalopolis – is a necessary one if we are to grasp that, with the contemporary geo-urban crisis, we both have and have not been here before. Stage two is an analysis of the contemporary problems of cities, particularly of the fact that their runaway gigantism has turned them into parasites, potential terminators of the planet. Stage three sets out the range of solutions that could, as elements of a totalising consciousness, result in sustainable urban living.

The book is imaginatively illustrated. Those weaned on the idea that true knowledge is necessarily austere and unadorned must think again. In fact, the pictures and diagrams bring out the perceptual and conceptual parameters of the text.

The special edition of the original 1992 *Gaia Atlas* is for the 1996 Habitat II Conference. With a new introduction by the Habitat Secretary-General Dr Wally N'Dow, it is an essential contribution to the process of clarifying and then applying what may seem initially an overwhelming array of good practice as it, at last, begins to emerge into the public arena in Istanbul in June 1996. *Bob Catterall*

Bob Catterall is editor of the quarterly journal *CITY – analysis of urban trends, culture, theory, policy, action.*

GLOBAL REPORT

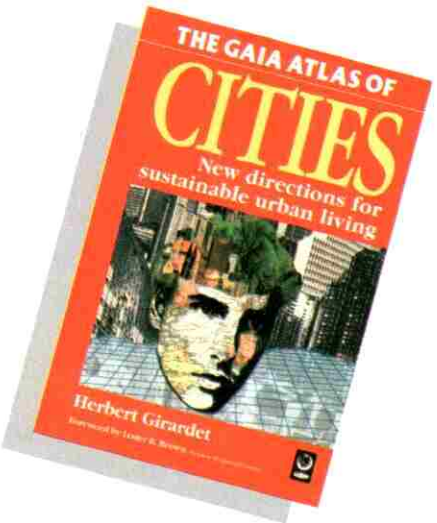
An Urbanizing World: Global report on human settlements

UNCHS (Habitat) Oxford University Press, Oxford and New York, 1996.

As the background report for Habitat II, this volume usefully reviews conditions and trends among the world's cities, towns and villages and how governments and international agencies are seeking to address urban problems.

Running to over 500 pages with its statistical analysis, and drawing on 30 specially commissioned papers by specialists in both North and South and on data from over 100 recent censuses, it is the most comprehensive and detailed report of its kind. It includes some surprises – for instance the slow down in the growth rates for most of the world's largest cities and the large increase in urban poverty.

The report also includes many case studies of cities where poverty and lack of basic services have been tackled, environmental conditions much improved, long range sustainable development plans created and dependence on motor cars reduced.



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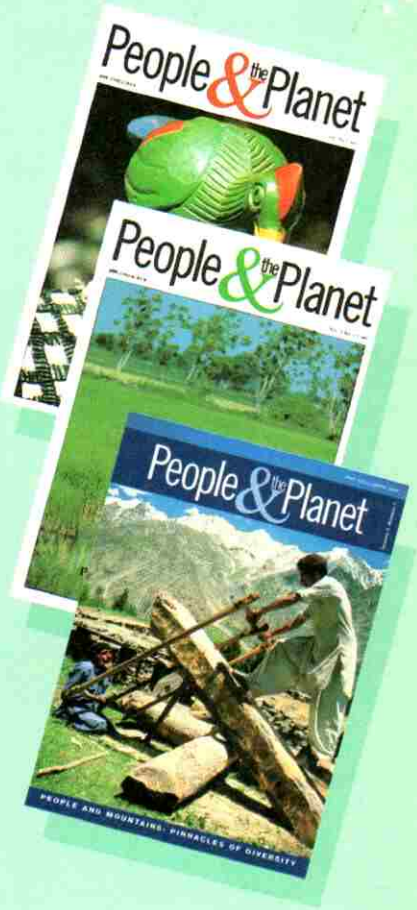

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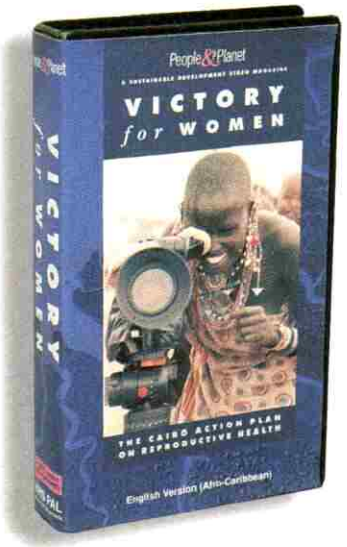

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